RAILROAD GAZETTE

FRIDAY, APRIL 25.

Train Accidents in March.

The following accidents are included in our record for the month of March:

COLLISIONS.

REAR.

On the morning of the 2d a freight train on the Pittsburgh & Lake Erie road ran into the rear of a passenger train which had stopped at Carbon, Pa., doing some damage.

On the night of the 3d a freight train on the Northern Pacific road, with a snow-plow in front, ran into a preceding freight which had stopped at Jocko, Montana, without sending back a signal. The snow-plow split the caboose in two, throwing the men who were in it in every direction. Two trainmen were fatally scalded by the steam from the engine, and five oters were hurt.

On the afternoon of the 5th a freight train on the Grand Rapids & Indiana road ran into the rear of a construction train near Portland, Ind., damaging several cars.

On the evening of the 7th a passenger train on the Baltimore & Ohio road ran into the rear of a freight train near Gastonville, Pa., damaging several cars and injuring a brakeman.

On the morning of the 8th in Macon, Ga., on the East Tennessee, Virginia & Georgia road, an engine ran into another engine on a curve. One was a regular shifting engine and the other the engine of the north-bound freight, but it was not attached to the train at the time of the collision. The two locomotives came together with considerable force, doing some damage, and became interlaced or fastened together. Both of the engineers were bruised somewhat by the shock of the collision, and one of the firemen had his arm and shoulder hurt. The fireman went back to the yard to get another engine to pull the two collided engines apart. As this third engine was coming the fireman was unable to reverse it, on account of his hurt hand, and his engine ran into the other two and knocked them both off the track. Superintendent Mallory suspended both of the engineers.

On the night of the 11th a freight train on the New York, Lake Erie & Western road ran into a preceding freight near Suffern, N. Y., damaging the engine and nine cars. Seven of the cars were oil tanks. The oil caught fire and the wreck was entirely destroyed and the track was burnt up and destroyed for over a quarter of a mile. The road was blocked all night.

On the morning of the 12th a passenger train on the North Shore road ran into a snow-plow with two locomotives standing at Champlain, Que., making a very troublesome wreck.

On the morning of the 14th a freight train on the Chicago & Northwestern road ran into a another freight which was just going into a siding at Blackberry, Ill. Both engines were badly damaged, one of them being thrown over into a ditch on its side.

On the night of the 18th a freight train on the Norfolk & Western road ran into a preceding freight which had stalled on a grade near Crump Mills, Va., wrecking five cars. It is said that the second train was following the first so closely that although the conductor sent a flag back promptly he was not in time.

On the night of the 18th a freight train on the New York, Lake Erie & Western road ran into a preceding freight which had stopped to take water at Cuba, N. Y., wrecking several cars.

On the evening of the 19th a freight train on the Chicago, Burlington & Quincy road ran into the rear of a passenger train which had stopped near Malvern, Ia., to remedy some slight breakage of the engine. Two cars were wrecked.

On the night of the 20th a freight train on the Chicago & Northwestern road ran into a preceding freight near Mechanicsville, Ia., damaging several cars. There was a dense fog at the time.

Very early on the morning of the 21st a freight train on the Lake Shore & Michigan Southern road broke in two near Angola, N. Y., and the rear section afterwards ran into the forward one, damaging several cars. The collision caused an oil tank on the train to explode and take fire. In a short time the wreck was burned up and entirely destroyed and the ties on both tracks for some distance were burned up and the rails warped out of shape. Two brakemen were hurt and two men who were near the track when the oil tank exploded were also badly hurt. In all 26 cars were destroyed and the track had to be relaid for nearly half a mile.

About noon on the 22d a passenger train on the Chicago, Milwaukee & St. Paul road ran into an emigrant train which had stopped at Red Wing, Minn., wrecking two cars and injuring 15 persons slightly.

On the morning of the 23d a freight train on the Louisville & Nashville road broke in two near Newport, Ky., and the rear section ran into the forward one wrecking seven cars and injuring three trainmen.

On the morning of the 24th a yard engine on the Texas & Pacific road ran into a freight train at Dallas, Tex, wrecking several cars.

On the afternoon of the 26th a coal train on the Pennsylvania Railroad ran into the rear of a freight train which had stopped at Tinker Run, Pa., wrecking the caboose and another car and blocking one track for three hours.

On the night of the 26th a freight train on the St. Louis, Iron Mountain & Southern road ran into a preceding freight near Oliphant, Ark., damaging the engine and several cars. The engineer, fireman and a brakeman were killed.

On the afternoon of the 27th a freight train on the Pittsburgh, Ft. Wayne & Chicago road ran into a preceding freight near Bellevue, Pa., wrecking several cars.

On the night of the 27th a freight train on the Pennsylvania Railroad ran into a shifting freight in the yard at Harrisburg, Pa. Some twelve cars were badly broken and the wreck scattered over the yard. The engineer jumped, but was caught under the engine and killed.

On the evening of the 28th a passenger train on the New York, West Shore & Buffalo road ran into a freight train which was backing into a siding at Savannah, N. Y. Both engines and a number of cars were badly damaged and two trainmen hurt. The road was blocked all night.

On the morning of the 29th a freight train on the Pennsylvania Railroad ran into a preceding freight near Saltsburg, Pa. Several cars were wrecked, the engine damaged, and the engineer killed.

BUTTING.

On the morning of the 1st there was a butting collision between two freight trains on the Pittsburgh, Cincinnati & St. Louis road near Oregon, O., in which both engines were damaged and several cars badly broken.

On the night of the 1st there was a butting collision between two freight trains on the Chicago, St. Louis & Pittsburgh road near Bowerstown, O., by which both engines and several cars were wrecked. It is said that one of the trains had orders to wait, but did not observe them.

On the morning of the 3d there was a butting collision between a wild engine and a freight train on the Virginia Midland road near Lynchburg, Va. The engineer of the wild engine reversed his engine and jumped off.

As soon as it recovered from the shock of its collision it started off backwards, and ran down the track at a high speed and into the yard at Lynchburg, where it met a Norfolk & Western train just hauling out, causing a second collision. In this the runaway engine was completely wrecked and the other locomotive considerably damaged.

On the evening of the 3d there was a butting collision between two passenger trains on the East Tennessee, Virginia & Georgia road near Juliette, Ga., caused by a misunderstanding in orders received by one of the trains. Both engines were badly wrecked, and two baggage cars and a fruit car badly broken up. The engineer and fireman of one train were killed and an express messenger was hurt.

Very early on the morning of the 5th there was a butting collision between two freight trains on the Chicago, Burlington & Quincy road near Millington, Ill. Both engines and several cars were badly wrecked. One fireman was killed, the fireman, both engineers and a brakeman were hurt. The other accident was caused, it is said, by a mistake in orders given by the train dispatcher.

On the morning of the 9th there was a butting collision between a passenger and a construction train on the Kansas City, St. Joseph & Council Bluffs road near Plattsmouth, Ia. Both engines and several cars were wrecked, three trainmen and one passenger hurt.

On the afternoon of the 15th there was a butting collision between two freight trains on the Chicago & Grank Trunk road near South Bend, Ind., caused by a mistake in orders. Both engines and a number of cars were badly wrecked, one trainman fatally injured and four other less severely hurt.

On the evening of the 22d there was a butting collision between two freight trains on the Ohio & Mississippi road near Vincennes, Ind., both engines and 14 cars being wrecked.

On the morning of the 19th there was a butting collision between a passenger train and a pay train on the Minneapolis & St. Louis road near Northfield, Minn. Both engines were badly damaged and a fireman hurt.

On the night of the 10th there was a butting collision between two freight trains on the Chicago & Alton road near Marshall, Mo., by which both engines and several cars were damaged.

On the afternoon of the 20th there was a butting collision between a passenger and a freight train on the International & Great Northern road near Palestine, Tex. Both engines and several cars were damaged.

On the morning of the 21st there was a butting collision between two freight trains on the Missouri Pacific road near Independence, Mo, wrecking both engines and ten cars, and injuring a brakeman. It is said the collision was caused by the conductor of one of the trains forgetting his orders.

On the evening of the 24th there was a butting collision between a passenger and a freight train on the Toledo, Cincinnati & St. Louis road in Cincinnati, O. Both engines were damaged. After the collision it was found that there was nobody on board the freight train, and it was afterwards discovered that the crew, expecting an accident on the steep grade a mile above, had jumped off and left the train to take care of itself.

On the evening of the 29th there was a butting collision between two freight trains on the Wheeling & Lake Erie road near Massillon, O. Both engines and several cars were badly wrecked. Both trains were running out of time.

CROSSING.

On the morning of the 28th a Chicago, Milwaukee & St. Paul freight ran into a Minneapolis & St. Louis freight at the crossing of the two roads in Norwood, Minn., wrecking five cars.

DERAILMENTS.

BROKEN RAIL.

On the morning of the 1st the engine and six cars of a freight train on the Texas & St. Louis road were thrown from the track near Jefferson, Tex., by a broken rail. The engineer and fireman were hurt.

Early on the morning of the 4th an Illinois Central passenger train was thrown from the track by a broken rail on the Chicago & Iowa road near Maryland, Ill. Two cars were damaged and three passengers hurt.

Early on the morning of the 11th a passenger train on the Canadian Southern Division of the Michigan Central road struck a broken rail near St. Thomas, Ont., and two cars were thrown from the track. Two passengers were slightly hurt.

On the evening of the 13th several cars of a passenger train on the Chicago, Rock Island & Pacific road were thrown from the track near Joliet, Ill., by a broken rail.

On the morning of the 15th a passenger train on the Western North Carolina road struck a broken rail near Marion, N. C. The whole train was thrown from the track and the engine and baggage car were badly wrecked. The engineer was killed and a fireman hurt.

On the night of the 15th a passenger train on the Alabama Great Southern road struck a broken rail near Steele, Ala., and one car was thrown from the track.

On the night of the 15th a freight train on the Richmond & Danville road struck a broken rail near Durham, N. C., and nine cars were thrown from the track and piled up in a bad wreck.

On the night of the 17th a coal train on the Toledo, Cincinnati & St. Louis road struck a broken rail near Dayton, O., and the engine was thrown from the track and a number of coal cars piled up on top of it. The fireman was caught under the engine and roasted to death before he could be taken out. The engineer was crushed between the engine and tender and killed at once.

On the afternoon of the 19th a passenger train on the Central Branch road struck a broken rail when near Frankfort, Kan., and the rear car was thrown from the track and upset in the ditch. Three passengers were seriously hurt, besides a number slightly bruised.

On the night of the 29th a passenger train on the Vicksburg & Meridian road was thrown from the track near Forest, Miss., by a broken rail.

BROKEN FROG.

On the morning of the 24th the engine and one car of a freight train on the Batesville & Brinkley road were thrown from the track near Brinkley, Ark., by a broken frog.

BROKEN SWITCH-ROD.

Very early on the morning of the 10th the engine of a passenger train on the New York, New Haven & Hartford road was thrown from the track in New Haven, Conn., by a broken switch-rod.

BROKEN BRIDGE.

On the morning of the 1st a freight train on the Montrose Railroad broke through the bridge over the Meshoppen Creek, near Tunkhannock, Pa., and the engine and five cars went down and were wrecked.

On the afternoon of the 9th the engine of a freight train on the Texas & St. Louis road broke through a trestle bridge at Brauer's Lake, Mo., and went down into the lake. The engineer was drowned.

On the morning of the 19th a bridge on the Missouri Pacific road near Prairie Lick, Mo., gave way under a freight train, and eight cars went down and were piled up in the creek in a bad wreck.

On the morning of the 24th a trestle bridge on the Georgia Railroad, near Milledgeville, Ga., gave way under a passenger train. The engine crossed over, but the baggage and express cars went down and were badly damaged.

SPREADING OF RAILS.

On the morning of the 3d a passenger train on the Utica, Ithaca & Elmira road was thrown from the track at East Spencer, N. Y., by the spreading of the rails. A brakeman was hurt.

On the morning of the 4th a passenger train on the New York, Lake Erie & Western road was thrown from the track near Bellman, Pa., by the spreading of the rails.

On the morning of the 5th a construction train on the St. Louis, Iron Mountain & Southern road was thrown from the track near White River, Ark., by the spreading of the rails. Several cars were wrecked. Two laborers were killed and three others badly hurt.

On the morning of the 10th a passenger train on the Texas & St. Louis road was thrown from the track near Corsicana, Tex., by the spreading of the rails. Two cars upset and four passengers were badly hurt.

On the morning of the 20th a freight train on the Texas & St. Lou's road was thrown from the track in Longview, Tex., by the spreading of the rails.

On the morning of the 20th a passenger train on the New York, West Shore & Buffalo road was thrown from the track near New Durham, N. J., by the spreading of the rails.

On the morning of the 20th a passenger train on the Elmira, Cortland & Northern road was thrown from the track near Perryville, N. Y., by the spreading of the rails. One car rolled over down a bank and was badly damaged, injuring six passengers.

On the morning of the 25th a freight train on the Elmira, Cortland & Northern road was thrown from the track near Canastota, N. Y., by the spreading of the rails, and four cars went into a ditch.

BROKEN WHEEL.

On the night of the 6th a car of a freight train on the New York, Lake Erie & Western road was thrown from the track near Callicoon, N. Y., by a broken wheel.

On the morning of the 7th the engine of a passenger train on the Chicago, Milwaukee & St. Paul road was thrown from the track near Astoria, Ia., by the breaking of a wheel. The engine was thrown over on its side, the engineer and fireman were killed, and a brakeman was very badly hurt.

On the evening of the 9th six cars of a freight train on the St. Joseph & Western road were thrown from the track near Marysville, Kan., by a broken wheel.

On the night of the 9th two cars of a passenger train on the New York, New Haven & Hartford road were thrown from the track on a trestle bridge at Mott Haven, N. Y., by the breaking of a wheel. Both cars went on the bridge and upset into the Harlem River. One passenger was badly hurt. The others escaped uninjured and were rescued by boats.

On the night of the 18th a car of a freight train on the New York Central & Hudson River road was thrown from the track near Auburn, N. Y., by a broken wheel, blocking the track two hours.

Early on the morning of the 19th five cars of a freight train on the New York, Lake Erie & Western road were thrown from the track near Port Jervis, N. Y., by a broken wheel.

On the morning of the 25th a car of a coal train on the Central Railroad of New Jersey was thrown from the track at Annandale, N. J., by a broken wheel, and the 25 following cars were piled up on top of it in a bad wreck.

On the night of the 27th several cars of a freight train on the Wabash, St. Louis & Pacific road were thrown from the track near Wabash, Ind., by a broken wheel.

BROKEN AXLE.

On the morning of the 20th several cars of a freight train on the Rome, Watertown & Ogdensburg road were thrown from the track at Hess Roads, N. Y., by a broken axle.

On the night of the 30th nine cars of a freight train on the Chicago & Grand Trunk road were thrown from the track near Battle Creek, Mich., by a broken axle.

BROKEN TRUCK.

On the morning of the 9th several cars of a freight train on the New York Central & Hudson River road were thrown from the track near Bergen, N. Y., by a broken truck.

ACCIDENTAL OBSTRUCTION.

On the evening of the 16th a freight train on the Pine Creek road struck a large rock which had fallen upon the track in a side-hill cutting near Cedar Run, Pa. The engine and one car went down from the bank into the creek, and twenty-four other cars left the track. The engineer was killed and a fireman badly hurt. The conductor and brakeman escaped uninjured by swimming across the creek.

On the morning of the 27th a passenger train on the New York Central & Hudson River road ran into a caboose which had jumped the adjoining track a moment before and upset upon the passenger track. The engine was thrown over and badly damaged and two cars were also somewhat damaged.

Very early on the morning of the 28th the engine and one car of a passenger train on the Oregon Railway & Navigation Co. road were thrown from the track near Blalock, Or., by a rock which had rolled upon the track in a cut. The engineer and fireman were hurt.

WASHOUTS AND LANDSLIDES.

On the evening of the 3d a passenger train on the Southern Pacific road ran into a wash-out near Tehachepi, Cal., doing some damage.

On the evening of the 5th a freight train on the Southern Pacific road ran into a wash-out near Indian Wells, Cal., and an engine and several cars were wrecked.

On the night of the 10th a freight train on the Chesapeake & Ohio road ran into a land-slide near Fort Spring, W. Va., was thrown from the track and down a high bank. The engineer was killed.

On the afternoon of the 13th as a freight train on the Pine Creek road was near Jersey Shore, Pa., a land-slide struck the train, throwing several cars from the track and nearly covering the engine up with earth. The road was blocked for a day.

On the afternoon of the 19th an express train on the Pittsburgh, Fort Wayne & Chicago road ran into a land-slide near Salem, O., and the engine and entire train were thrown from the track. The engine upset down a bank, and it appears that either at the moment it upset or immediately afterward the boiler exploded. The engine was torn to pieces and completely destroyed. The engineer and fireman were both killed. The cars were not seriously damaged. Eight passengers were hurt, but all of them very slightly. It was at first reported that the accident was

caused by the explosion of the boiler, but the evidence indicates that the train struck a land-slide and that the engine had left the track before the boiler had exploded, although the explosion caused the greater part of the damage.

On the afternoon of the 21st the engine and three cars of a freight train on the Pine Creek road were thrown from the track at Jersey Shore, Pa., by a land-slide, and went down a bank. The engineer and a brakeman were hurt.

On the evening of the 24th a freight train on the Chicago, Milwaukee & St. Paul road ran into a wash-out near Cannon Falls, Minn. Several cars were wrecked and four trainmen hurt.

On the evening of the 24th a wrecking train on the Chicago, Milwaukee & St. Paul road which had been sent to a train wrecked in a wash-out, ran into another wash-out near Cannon Falls, Minn., and the engine and wrecking car were badly damaged.

On the afternoon of the 26th a passenger train on the New Haven & Northampton road ran into a wash-out near South Deerfield, Mass., and an engine and baggage car went into the gap. The express messenger was badly hurt.

On the morning of the 27th a passenger train on the Maine Central Railroad ran into a land-slide near Yarmouth, Me., and an engine and three cars were thrown from the track and badly damaged. All the passenger cars remained on the track.

SNOW.

On the moruing of the 9th a snow-plow and three engines on the Maine Central road were thrown from the track in a deep drift in Jay, Me., blocking the road completely all day.

On the night of the 19th an engine and snow-plow on the New Brunswick road, which had been sent out to attempt to clear the road, were thrown from the track into a drift near Bluff, N. B., and both of them rolled down the bank and upon the ice in the St. John's River.

WIND.

On the afternoon of the 25th six cars of a train on the Louisville & Nashville road were blown from the track by a tornado near London, Ky., and were wrecked. A brakeman was killed.

RUNAWAY CARS.

On the afternoon of the 3d a passenger car attached to the rear of a coal train on the Bradford, Bordell & Kinzua road broke loose when near Bradford, Pa., and ran back at great speed down a steep grade until it struck a curve, when it jumped the track and went down a high bank and was completely wrecked. There was no one on board of the car at the time.

On the night of the 21st a freight train on the Indianapolis Belt Railroad broke in two near Indianapolis, Ind., and the detached cars started back down grade following the Belt road and the Union tracks into the Pan-Handle station, running completely through that station, smashing the doors and butting posts at the end of it and piling themselves in a bad wreck in the street beyond. The wreck was scattered all over the street and against the walls of the buildings opposite the freight house.

MISPLACED SWITCH.

On the morning of the 4th a freight train on the Texas & Pacific road was thrown from the track near Texarkana, Tex., by a misplaced switch.

On the morning of the 4th several cars of a freight train on the Syracuse, Geneva & Corning road were thrown from the track at Bennett, N. Y., by a misplaced switch. A brakeman was thrown from the car and killed.

On the evening of the 6th a passenger train on the Philadelphia & Reading road ran off the track near Bridgeport, Pa., and several cars were badly damaged. The accident is supposed to have been caused by a misplaced switch.

On the morning of the 7th the engine and several cars of a coal train on the Columbus, Hocking Valley and Toledo road were thrown from the track at Nelsonville, O., by a misplaced switch.

On the evening of the 29th the engine of a freight train on the Union Pacific road was thrown from the track by a misplaced switch near Kansas City, Mo. A brakeman was injured.

MALICIOUS.

On the night of the 26th a freight train on the Northern Pacific road went through a small bridge near Miles City, Montana, which had been set on fire by tramps. The engine crossed over, but six cars went down with the bridge and were wrecked. The fireman jumped from the engine and was badly hurt.

UNEXPLAINED.

About noon on the 4th several cars of a freight train on the Chicago, Burlington & Quincy road ran off the track at Lum's Crossing, Ill., blocking the road a short time.

On the morning of the 12th a car of a switching freight train on the Buffalo, New York & Philadelphia road ran off the track in Titusville, Pa., and knocked down the corner of a foundry adjoining the track.

On the night of the 12th two cars of a freight train on the Utah Central road ran off the track on a bridge over the Sevier River near Beaver, Utah. Both cars went over the bridge and fell into the river.

On the morning of the 17th the rear car of a passenger train on the Maryland Central road jumped the track near Fallston, Md., and upset down a bank, injuring six passengers, all of them very slightly.

On the morning of the 18th the engine of a freight train on the Toledo, Cincinnati & St. Louis road ran off the track in Dayton, O., and upset into the canal. Three men, who were on the engine, were hurt.

On the afternoon of the 18th a passenger train on the Syracuse, Chenango & New York road was thrown from the track near Lebanon, N. Y., and upset into a mill-dam adjoining the road. The engineer and fireman were hurt.

On the morning of the 21st several cars of a freight train on the Pennsylvania Railroad ran off the track at Octorara Junction, Pa., and were slightly damaged.

On the afternoon of the 21st the rear car of a passenger train on the Bradford, Eldred and Cuba road ran off the track at Petrolia, N. Y., and upset.

On the morning of the 25th several cars of a freight train on the Northern Central road ran off the track near Williamsport, Pa., blocking the road for some time.

On the afternoon of the 25th six cars of a freight train jumped the track on a trestle at Westport, Ark., on the St. Louis & San Francisco road and went off the trestle, dragging the engine down on top of them. The engine and cars were completely wrecked. The engineer was caught under the engine and killed, but the fireman escaped with the loss of one ear.

On the morning of the 26th the caboose of a freight train on the New York Central & Hudson River road jumped the track and upset upon the adjoining track near Manlius, N. Y. Another accident was caused by this.

On the morning of the 27th the engine of a freight train on the Northern Pacific road ran off the track near Mandan, Dak., and upset. The engineer was slightly hurt.

On the afternoon of the 31st a wild engine on the Rensselaer & Saratoga road ran off the track at Rupert, Vt., and upset. The engineer, a fireman and another man who was riding on the engine were badly hurt.

OTHER ACCIDENTS.

BOILER EXPLOSION.

On the evening of the 24th the engine of a special passenger train on the Hannibal & St. Joseph road exploded its boiler just as the train was starting from Brucklin, Mo. The engine was torn to pieces and the engineer was badly scalded.

OTHER.

On the morning of the 3d the engine of a freight train on the New York, Lake Erie & Western road broke a coupling rod when near Wellsville, N. Y., and one side of the engine was damaged.

On the afternoon of the 14th a wheel broke under a car of a passenger train on the Wabash, St. Louis & Pacific road in Champaign, Ill., but the car did not leave the track.

On the morning of the 25th a construction train on the New York, Ontario & Western road when near Cornwall Junction, N. Y., a number of dynamite cartridges, which had been placed under a pail on the tender, exploded, blowing out one side of the tender and completely destroying it.

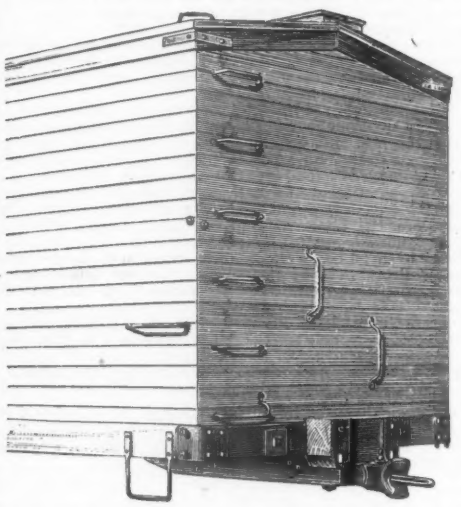
SUMMARY.

This is a total of 115 accidents, in which 26 persons were killed and 112 injured. As compared with March, 1883, there was a decrease of 27 accidents, an increase of 13 killed, and a decrease of 25 injured.

The three months of the current year to the end of March show a total of 372 accidents, 104 killed and 502 hurt. This is a monthly average of 124 accidents, 35 killed and 167 injured. March was below the average in all respects.

Arrangement of Ladder-Rounds and Grab-Irons on Boston and Albany Freight Cars.

The accompanying engraving illustrates a somewhat peculiar arrangement of grab-irons and ladder-rounds on the Boston & Albany Railroad, more particularly in the slight upward turn given to the inside end of the lower round, which is obviously one of those seemingly trivial changes of



detail which are yet a much-needed safeguard, costing almost nothing. The vertical grab-irons are so placed to give the brakeman a good hold when uncoupling from above or climbing up between the cars. The lower one only is used at both ends of the car, the brake-shaft serving in place of the upper one at the end of the car not shown. The iron corner-plates are also worthy of attention as an excellent detail, giving greater strength and safety from small injuries.

Freight-Car Couplers.

The following is an abstract of the discussion on this subject at the April meeting of the Car-Builders' Club.

Mr. ALEXANDER ROBERTSON explained his design for an automatic car-coupler, which can not be described clearly without an engraving.

Mr. CREAMER, inventor of the Creamer brake, expressed in strong language much regret and indignation at the delay in taking up and acting definitely upon this subject, claiming that to not do anything until it was certain that absolutely the best thing had been done was inexcusable.

Mr. ROBERTSON recommended suggesting some standard of the size that would be recognized by the Club as desirable or requisite.

Mr. KEELER, speaking as a railroad officer, said that something must be done before a great while, or those who make the laws would force them to do something. It was already agitating the minds of legislators and railroad commissioners. The proper persons to take the initiative were the car builders, and if they would appoint a committee with power he thought they would be backed up by the managers.

Mr. M. N. FORNEY was glad to hear an expression of opinion from a man engaged in practical railroad working like Mr. Keeler. But in spite of all that had been said and thought about the subject, and all the time and labor devoted to it, very serious difficulties stood in the way, such as those hardly realize who urge the adoption of a self-coupler. In a recent conversation, Mr. C. F. Adams, Jr., late a Railroad Commissioner of Massachusetts, had told the speaker that he had given a good deal of attention to the subject, but had abandoned all hope of the adoption of a coupler through the instrumentality of the railroad commissions. The problem would have to work itself out.

A leading patent lawyer recently said that whoever undertook the investigation of the subject should familiarize himself with the car-coupler patents already taken out, of which there were between 3,000 and 4,000. Mr. Forney himself, thinking it might be well to get copies of these patents, calculated the expense, which at 10 cents each would be nearly $400, so he was not ready to order them at once. It would be an enormous task to investigate these 4,000 patents, eliminate the worthless ones, and select the comparatively small number that have some merit. But this would only be a preface to the serious work, the experimenting with those few that seem to have some merit. Then probably there would have to be a period of modification. There are about 600,000 freight cars in the country now, and to apply a self-coupler to all these would cost an immense sum. It is therefore important to fix upon one that will be somewhere near the best.

If the Master Car-Builders' Association should appoint a committee to take up this subject, it would not require a prophet to foretell the result. The members appointed would be busy men who could not leave their duties for any great length of time. They would talk the subject over, count noses, approve what the majority said, and try to get out of the scrape as best they could.

To make the investigation properly, a number of men must give months to it. The Car-Builders' Association at present has not the means to command the kind of ability needed for such an investigation. The Connecticut Railroad Commission had said that if the Master Car-Builders' Association had a man of the same ability in regard to car-couplers that Mr. W. F. Allen, Secretary of the Time Convention, had exercised in regard to standard time, then a standard car-coupler would be adopted. The speaker did not like this aspersion of the association. Its members can not give the necessary time. But something ought to be done. The vast misery inflicted by the present method of coupling cars is hard to realize. He would not put the slighest obstacle in the way of the solution of the problem, but he would point out the real difficulties that lie in the way of taking any practical steps.

Mr. ECCLESINE was astonished to hear such a worker as Mr. Forney take the position that the problem could not be solved because it cannot be solved without great labor. He thought the Car-Builders' Association ought to take the responsibility—ought to be able by themselves to ascertain what is necessary, and prescribe the requirements which a coupler must fulfill.

Mr. MCCORMACK, representing the Gifford coupler, made some remarks about the merits of that device, and said that he would be glad to furnish 10, 20 or 1,000 couplers, to be returned if not approved.

Mr. KEELER explained that he did not mean that the car-builders should appoint a committee from among themselves to select or make tests of the different devices, but that they should hire a committee of scientific men, who should use their best judgment, and when they got ready to report what number they considered had sufficient merits, the car-builders then could call a meeting, and could witness tests, and decide for themselves. The railroad managers would readily accede to their suggestions.

Mr. FORNEY thought that was really the only practical way of solving the question, and it was because the car-builders and railroad managers had not been educated up to the point that they were standing where they were to-day. The only possible way of solving it would be to employ some persons who could devote the necessary time to it.

Mr. MCCORMACK said the lack of uniformity among the different roads was a great obstacle. One road uses a 9-in. link; another 9½-in.; another 10¼-in.; another 11-in. One wants ⅛-in. of slack; another, 2-in. slack. The first thing to do is to make cars as uniform in height and shape as possible. He had some tests made under the supervision of Mr. Cloud, at Altoona, not long ago. The first thing he said was, "This is made of cast-iron; we have a standard." They had got a man-killer on their road which he thought is most barbarous. It had only one thing to recommend it: it was very strong and very cheap. He thought he had the best car-coupler in the world, but he knew of 20 car-couplers that would save life; 20 couplers that the legislatures ought to compel railroad companies to put on.

Mr. FORNEY said that Mr. McCormack had stated precisely some of the difficulties which stood in the way, and part of the duties of a commission would be to investigate and report to the railroad companies on that class of difficulties and try and bring about uniformity.

A gentleman, representing the Union car-coupler of Boston, exhibited a model of his device.

Mr. MARKS exhibited a model of a car-coupler and described its operation. He said he had this coupler in operation on what he supposed to be the worst train in the country—on a logging train. It was working quite satisfactorily, and the trainmen said that they liked the coupling better than anything they had ever seen. He would furnish them on trial.

MR. NEIDLINGER showed a model of the Fort Wayne coupler and explained it.

MR. BROWNING exhibited a model of a coupler in use on the Baltimore & Ohio Railroad.

THE PRESIDENT called on Gen. Fitz-John Porter, as one who had given much thought to the subject, to give some light.

GENERAL PORTER said that the brains and the experience and the time not only exist to deal with this matter to give it due attention but that have already done so. A year ago last October, at a meeting of the Car-Builders' Association at Niagara Falls, a committee examined car-couplers and recommended for trial five of them, and of those five one he knew had been applied and tried and had been adopted by the Lehigh Valley Railroad, and had been put upon its cars, and had proved itself successful, and was very highly recommended. That coupler was the Excelsior Car Co.'s automatic coupler. It had been recommended by Mr. Goodwin as being as good a thing as he had seen, and he said that he is perfectly satisfied with it. It was also in operation on the Missouri Pacific road. It had been on the South Carolina road and also on the Connecticut Valley road. He mentioned these facts as showing that the Car-Builders' Association has all the facilities for carrying out the wishes of the railroads. They could get abundance of time and have trials on the railroads. The recommendation of this Association for any one car-coupler, or two or three, undoubtedly would carry sufficient influence and would do the Association great good as showing the country that they are willing to take care of the lives and limbs of their associates. He knew of nothing better for the Association to take hold of and to work at, and believed that many members would be willing to give their efforts and exertions to it.

So far as the expense connected with his own company's coupler was concerned, Mr. Lentz could probably tell of that. The expense probably would be ten or eleven dollars. He would be glad to have the Association examine their couplers and other couplers, take their choice among them, and apply one or two of them to the cars. That, he thought, would meet with the wishes of the railroads.

THE PRESIDENT said that of the five devices recommended by the committee nearly all had been in use and had proved more or less satisfactory, and he was pleased to be able to say that more progress had been made toward getting an automatic coupler during the last ten months than in all the years previous. He was pretty well satisfied that during the next ten months they will arrive at something that will come into general use.

Messrs. THAYER, LANCASTER, GALLANTINE and STAMP exhibited models of couplers.

Mr. NEIDLINGER said that a number of inventors of couplers had spent a great deal of time and money in their efforts for the introduction of the improvements. He for one was willing to subscribe to a fund to employ experts selected by the leading railroads of the country, three or

six months, as they might see fit. There were enough inventors of car-couplers in the country to employ experts to make these tests by paying each a small pittance.

Another car-coupler inventor expressed his willingness to subscribe to such a fund.

Mr. FORNEY said there was this fatal objection to that plan. The person on trial should not fee the judge, and the committee to examine these couplers ought to be quite independent of inventors of the couplers. The people to pay for this commission were the railroad companies themselves.

Mr. KEELER would not be a party to the adoption of any coupler if it was recommended by a commission paid by the inventors, and they would not feel that we were doing justice to themselves or to the community at large. The railroad companies should hire the men and not have them under any obligation whatever to the inventors. Then they would be perfectly free to act according to their own judgment.

The Proposed Stock Dividend of the Cleveland, Columbus, Cincinnati & Indianapolis.

It will be remembered that at the annual meeting of the Cleveland, Columbus, Cincinnati & Indianapolis Co. last month the following resolutions were presented by the representatives of certain trusts in England holding stock of this company :

"*Whereas*, The published reports of the Cleveland, Columbus, Cincinnati & Indianapolis Railway Co. show that the net earnings of said company have been largely in excess of operating expenses, fixed charges and dividends paid, and

"*Whereas*, Large sums so earned, amounting in the aggregate to more than $3,000,000, have from time to time been expended in improvements upon the property of said railway company and its leased lines, and in acquiring additional real estate and increased terminal facilities, therefore, be it :

"*Resolved*, That the directors of the company be and they hereby are respectfully requested to declare and to pay in cash to stockholders of record, such an amount in dividends as properly represents the net earnings of the Cleveland, Columbus, Cincinnati & Indianapolis Railway for the last fiscal year, and be it

"*Resolved*, That the directors of the company be and they hereby are respectfully requested to declare that the stockholders of record are entitled to such dividend or dividends as properly represent the aggregate amount of net earnings of the Cleveland, Columbus, Cincinnati & Indianapolis Railway Co. which have heretofore been applied to improvements upon and additions to the property of said company and the leased lines, and for which the revenue account of said company may properly be reimbursed from capital, or additional securities representing the cost of such additions and improvements, and be it further

"*Resolved*, That the directors of the said company be and they hereby are respectfully requested to take such steps as to them may seem proper for providing for the payment to shareowners of the net earnings, heretofore applied as aforesaid to other purposes."

At the first meeting of the board following the annual election, these resolutions were brought up for consideration and the board further heard Mr. James McHenry on his views of the financial policy of the company. All these matters were referred to a sub-committee for consideration and report, and that committee has prepared an elaborate report which has now been published, and of which a summary will be found below :

REPORT OF COMMITTEE.

The committee states that for the four years from 1864 to 1867, the net earnings averaged $653,589 per year, and the dividends paid in the same time averaged $614,601 per year, or 10¼ per cent. on the stock. In 1867 the total stock and debt was $6,725,000, a decrease of $66,500 during the four years. During this time the road extended only from Cleveland to Columbus, having a close alliance with the Little Miami line from Columbus to Cincinnati. Nearly all the traffic of the Southern states going to the lakes had gone over this line with but little competition. In 1866, however, a large reduction in the gross earnings commenced, chiefly owing to the competition of new rail routes and to the opening of water routes which had been closed during the war.

In May, 1867, the Bellefontaine Railroad was acquired and the through route to the southwest controlled by the company was changed from that *via* Columbus & Cincinnati to that by Indianapolis. In 1869 the Little Miami road, having been leased by the Pennsylvania Railroad Co., this company undertook the construction of a road of its own to Cincinnati, avoiding Columbus and making the new route by Delaware by Springfield and Dayton direct to Cincinnati. A year previously the construction of the Indianapolis & St. Louis road, in which this company was part owner, had been entered upon.

The financial result of this policy in the period between 1868 and 1872, inclusive, five years, was substantially as follows: The net earnings averaged $857,446 per year, an increase of 31 per cent. over the preceding period of four years, but this increase was made after the mileage owned by the company had been increased from 188 to 391 miles and the stock and debt increased from $6,425,000 to $18,366,275, showing with nearly three times the amount of stock and debt, a gain of only $204,000 in the yearly net revenue. The dividends paid in this period averaged $806,122, or 7 per cent. yearly. In plain words, it had only been possible to procure the net earnings for distribution to the shareholders by selling stock or bonds to an extent absolutely dangerous to the solvency of the company, as the road had ceased to respond with increased net earnings to the large outlays attending extensions and changes in connection.

In the period of eleven years, from 1873 to 1883 inclusive, the net earnings averaged only $601,394 per year, and the dividends paid during that period have averaged $320,268, or 2⅛ per cent. yearly. During this this period the increase in stock and debt was $4,465,325, or over 25 per cent. Nearly one-third of this increase was in 1883, and was made necessary by the acquirement of control over and the rebuilding of the Indianapolis & St. Louis and the St. Louis, Alton & Terre Haute roads between Indianapolis and St. Louis, as set forth in the last annual report.

During this period of 11 years the sum of $2,796,000 has been expended for additional equipment and permanent improvements of the road, the construction account averaging $254,000 yearly, and representing the expenditure which was required under the circumstances simply to hold and retain the average yearly net earnings, which nevertheless fell short by about $256,000 of the average net earnings of the preceding period of five years. It must be remembered, however, that in this period the road has been burdened with the interest charges on $3,000,000 of bonded debt which had been put upon it in the preceding period of five years.

The following comparison is given by the committee to illustrate the earning capacity of the road during the three periods referred to, the figures given in each case being the yearly average for the period named :

	1864-67.	1868-72.	1873-83.
Freight ton miles...	47,863,208	165,464,455	353,933,290
Rate per ton-mile...	2.456 cts.	1.513 cts.	0.840 cts.
Cost " "	1.738 "	1.095 "	0.689 "
Net " "	0.718 "	0.418 "	0.151 "

The decrease in the rate per ton-mile for the third period was 44.5 per cent., as compared with the second, and 65.8 per cent., as compared with the first period.

These figures show that the greatly increased volume of freight traffic carried over the road has been entirely without a corresponding profit. The great decline in rates on freight, for which no possible economy in the operating expenses can compensate, shows that the increase in earnings cannot be made simply from an increase in the volume of business.

This was one of the causes of disappointment to the management in the result of the policy adopted in 1868, and this the committee regards as almost sufficient without further argument to show that it would be unwise to incur further indebtedness simply for the purpose of declaring dividends.

The practice of dividing stock among the shareholders to represent earnings used for construction was not unknown in the earlier history of the company, and indeed at that time several stock dividends were made even without this excuse. Between 1851 and 1873 stock dividends were declared to the amount of $1,591,133, and in 1868 to equalize in the matter of consolidation with the Bellefontaine road additional stock was issued to the stockholders to the amount of $1,200,000. The committee concludes that the principle of issuing stock to represent earnings has already been sufficiently recognized without any further issue and that this precedent should not be followed until the operations of the road shall show that it may reasonably be depended upon to earn additional net revenue and be able to pay dividends upon the increased capital. The committee also say that no single stockholder on record has asked or manifested a desire for such dividend, and in statements recently made, the expression of feeling has been in opposition to it.

The report gives a comparison of the market value of the shares on the stock exchange for a period of 24 years, and shows that, notwithstanding the irregularity of the dividends since 1873, the average market of the stock has more than equaled the average value during any preceding period and with less fluctuation.

The committee's report says, in conclusion: "In addition to the previous comment touching the policy of the management of 1868 (with the railway then extending between the cities of Cleveland and Columbus), in establishing and constructing extensions of the railway to the cities of St. Louis and Cincinnati respectively, there may further be said of the past disappointing outcome in its financial results:

"That in the case of the extension to Cincinnati (the Cincinnati & Springfield Railway) the traffic *via* the Cincinnati gateway did not increase in proportion to the increase of competition with the additional transportation facilities then opened at that point. The traffic that had formerly been done over the Little Miami and Columbus & Xenia roads in connection with the C., C., C. & I. paid well to the joint companies.

"With the establishment and operation of a new and rival railway, as was the Cincinnati & Springfield, it followed from the first opening of the new road, and for the years thereafter up to the past year, that the operating of both the Little Miami and the Cincinnati & Springfield resulted in more or less loss to the lessees and operating companies.

"But, with the growth of business by the development of the Southern country particularly, and with the increasing importance of Cincinnati as a railrord centre, from the special effects of new roads from the South, now tributary to that city, the time seems to have at last been reached when the road to Cincinnati will be at least self-sustaining, and that it will yield its traffic to the main line without working a deficiency in the latter's own income as heretofore.

"And, further as to the policy of 1868 in the extension to St. Louis, one principal trouble in the result seems to have been that the connection was only *partially* secured. Another railway interest (the Pittsburgh, Fort Wayne & Chicago), joined with the C., C., C. & I. in the plan, which interest presently passed into the control of a hostile interest practically, the Pennsylvania Railroad Co. And then followed the completion of another *new* line between St. Louis and Indianapolis, every mile of it in effect a competitor of the St. Louis, Alton & Terre Haute and the Indianapolis & St. Louis lines, and the said new line a part of the Pennsylvania Railroad system and controlled by that interest. Here was repeated on a grander scale the disruptive policy between the Little Miami and the C., C., C. & I. interests, but in practical effect attended with greater loss. The mitigating circumstances of this situation perhaps were that the losses west of Indianapolis were not as great as might have been expected under an evenly divided executive control of rival interests ; and that the Pennsylvania Company did stand in its lot an equal bearer of current operating loss up to 1881 as an inheritor of a line competitive to its own throughout, and which had come into its grasp by the acquisition of the Pittsburgh, Fort Wayne & Chicago Railway, the former business ally of the C., C., C. & I.

"The operation of the St. Louis, Alton & Terre Haute and the Indianapolis & St. Louis railroads by its evenly balanced directory of adverse interests, with an enforced policy of neutrality, weak at all points, and in practical management being incapable of exercising such power and independence as was required to meet and cope with the strong and rapidly developing competition in the West for prestige; pre-eminence and control of traffic on the part of old and new rivals; the operations then of these two properties was in result what only could have been expected.

"No railway in the Western country, part of a through system, can be worked at its best with fixed and defined neutrality in management. And so it was that the St. Louis, Alton & Terre Haute railroad, which was the first completed railroad fron the East to the eastern bank of the Mississippi River at St. Louis, and with terminal facilities for years exceeding any other road at that point, waned and dwindled in competition for traffic, as the Vandalia, the Ohio & Mississippi, and the Wabash railroads respectively pushed in to the St. Louis gateway, with unlimited capacity for business and energetic and aggressive management.

"The physical condition of the St. Louis, Alton & Terre Haute and the Indianapolis & St. Louis roads had meanwhile been slowly and steadily deteriorating, whilst their equipment weakened and became more and more inefficient.

"The increasing difficulties, both financial and political, attending these two roads and which could, perforce, only be solved by time, were finally brought to a crisis through the placing of the Indianapolis & St. Louis Railroad in bankruptcy during 1882. The final solution of the matter, and the full acquirement and control by the C., C., C. & I. Co. of the lines between Indianapolis and St. Louis, and the rebuilding and restoration of these properties, is set forth in the annual report of the past year.

"In all that has been borne and done, and as earnest and anxious as the board has been to make dividends, the best interests of the stockholders and the responsibilities of the management have faithfully been regarded.

"And now, that the present situation has been reached, it is the opinion of your committee that judicious caution should continue to be observed in the making of dividends.

"The Cincinnati & Springfield, and the Indianapolis & St. Louis roads having now reached the point where their operation promises to be unaccompanied by loss, it is to be expected that dividends *from the net earnings* of the railway can be declared hereafter with greater certainty and regularity.

"The regular dividend paying dates of the company are Feb. 1 and Aug. 1. It is the recommendation of your committee that at this time no dividend of any kind be declared."

The report of the committee (which consisted of Messrs. J. H. Devereux, Cornelius Vanderbilt and S. Burke) was received by the board, and its conclusions were unanimously approved and adopted.

The Baltimore & Ohio Employes' Relief Association.

At a quarterly meeting of the Committee of Management of the Baltimore & Ohio Employés' Relief Association held at Grafton, W. Va., April 22, the resignation of its Secretary, Dr. W. F. Barnard, who organized the association in 1880, tendered on account of impaired health, was accepted to take effect May 6, 1884. Dr. Barnard furnished the following résumé of the association which will interest all railroad men :

As originally inaugurated the Association provided relief for its members in sickness and accident, and provision for their families in death. Starting with an opposition from those it sought to benefit probably unparalleled its own merits have in four years placed it in the foremost rank of all benevolent institutions and it stands unique among similar railroad societies. In these four years it has issued 42,103 policies, has now an active membership of 17,855, comprising 85 per cent. of all the employés of the Baltimore & Ohio Co. and 96 per cent. of those not engaged in sedentary occupations, "being undesirable risks." It has taken into its treasury $1,004,929 on all accounts. Of the $851,714 received on account of relief features $814,132 were derived from premiums of members, and $37,582 from the investment of the $100,000 donation of the Baltimore & Ohio Co., and other funds not needed for immediate disbursement. From this revenue it has distributed to date $684,749 for sick, accident and death benefits and for surgical expenses and medicines, without cost to members, to prevent and check the spread of infectious and other diseases. These disbursements involved 30,519 separate payments, generally to different individuals, and were distributed over a territory extending from Wilmington, Del., and Baltimore to Parkersburg, Columbus, Chicago, Sandusky, Wheeling, Pittsburgh, and all intermediate points on the lines. The net balance to credit of of the relief features after deducting outstanding liabilities was reported as $13,117. That the association had been able during the past three years to not only meet all its obligations and to set aside a reserve fund, but also to gratuitously double the insurance paid on death of members and still retain this surplus, the Secretary declares the record will show to be due not to overtaxation of members for premiums but to economical management and to the vigilant medical and sanitary control exercised over members and over the company's premises, supplemented by the material aid given the association by the company. This medical supervision has promoted not only the physical and moral welfare of the employés, but had also preserved and improved the company's property and in a number of ways benefited the service originating with the Baltimore & Ohio Co. It marked an era in railway advancement.

The Secretary had hoped appropriately to close his labors on behalf of the association by being able to announce definitely the establishment of a new pension feature. While unforeseen delays had occurred, he yet believed the necessary means would be forthcoming. If inaugurated, this pension feature would provide, first, for the support during life of those members who, on reaching the age of 60 or upward, become unable to satisfactorily perform the service assigned them, or who, on reaching the age of 65 or upward, retire from the service of their own accord, the amount of pension graded being half of the present sick benefit ; second, for the continued support of those sick and disabled members who, having received in full the benefits promised them by the relief feature, continue thereafter unable to earn a livelihood, payments being made according to the above scale. Third, to enable pensioners to continue their insurance in the association against death. Fourth, for purchasing artificial limbs, or money commutation thereof, for every member of the association who may lose a limb in the service.

While this proposed feature in connection with the relief and annuity features will provide practical indemnity for loss of occupation and provision for the family of deceased members under minor provisions, they are also furnished with transportation for themselves and families over all the lines of the Baltimore and Ohio Railroad at half the rate given the public, with the free service of four hundred skilled resident physicians, with access to eleven of the best hospitals in the country located at salient and accessible points on the road, and with circulating library facilities for the sick and disabled, and are thereby better protected from want and suffering and the vicissitudes of life than, perhaps, the employés of any other large corporation in the world.

Mr. Barnard considers this association as yet in its infancy, and as just beginning to develop its full capacity for usefulness. The human race has little gratitude for *philanthropical* benefits, therefore, while the relief features had been instrumental in greatly improving the harmonious relation between employer and employé, he anticipated they would be strengthened and cemented by the savings and building features now in operation for 20 months, whereby members, however isolated, may enjoy the privileges of an extended banking establishment covering the entire Baltimore & Ohio system, by means of which they receive the highest current interest on deposits and can borrow at a uniform rate of 6 per cent.; are enabled to acquire homesteads and property or exceptionally favorable terms (practically ordinary rentals); may obtain building and other materials at wholesale prices and considerable reduction of current freight rates, and may have the services of experienced officials in negotiating real estate and other transactions, at a nominal cost, and all under the guarantee of one of the financially strongest railroad corporations in the country.

Such features involving money benefits will be most appreciated by the classes of people dealt with, as already shown by the fact that this savings fund, without canvassing, has received $130,883 of deposits in small sums, and has loaned $72,860 to those seeking homes under the Association's auspices, involving 114 real estate transactions. The savings fund has at present a cash surplus over of $47,000 and applications for loans probably sufficient to absorb the whole of it. He also referred to the assured establishment

at no very distant day, from private funds subscribed by friends of the Association, of a hospital and sanitarium exclusively for the employés and families of employés of the Baltimore & Ohio Co., and the probability of the establishment of a home for disabled employés in connection therewith. He reported that considerable private funds had been promised for founding a library through the agency and development of which needed opportunity will be offered employés to qualify themselves for promotion and advancement in life, while their children, wherever located, will have at hand instructive and entertaining reading matter seldom obtainable outside of large cities.

In this connection he said it is contemplated by the Baltimore & Ohio Railroad Co. to furnish special technical instruction to its apprentices, and fit them for the duties of officials of the company. In his judgment these projects are all near fulfillment, and he congratulated the Association upon its financial prosperity, its widespread usefulness, and the brilliancy of its assured future.

In accepting his resignation the committee of management voted thanks to Dr. Barnard for his past services. It also ordered the resumption of the medical examination of all seeking membership.

English Railway Wheels.

II.

The first of these articles (published last week) described the various modes of attaching the tires to the wheels, seven different modes of doing which were illustrated. In respect to the wheel centres, the cheapest form in use is that having cast-iron bosses or hubs, with wrought-iron spokes (see fig. 8). It is suitable for coal cars, etc., and is very generally used under all classes of freight cars. In manufacturing such wheels the spokes are cut from bar iron, and bent to the required triangular shape in a machine, the action of which is shown in the diagram fig. 12. The spoke, having been heated in a furnace, is placed in the machine at *A*, and caught by a pair of rollers which works in guides by means of a nut and screw; these bend the spoke to the required shape, when a cam working vertically lifts the spoke out of its position, and it is removed by the attendant. Meanwhile the rollers, by means of automatic reversing pulleys, run back ready for another spoke, and the process is repeated. Eight bent spokes having been placed upon a molding table in a circle, cast-iron "chills" or molds are placed under and over them, and the metal forming the hub is poured in. After a few minutes to solidify and while still red hot the table is canted over on pivots with which it is supplied, and the wheel is rolled away to cool. The next operation is that of "glutting" or welding a triangular-shaped section of iron at the corners of each two spokes, thus forming a continuous rim, which is done either by hand or by a hydraulic press, according to the conveniences possessed by the manufacturers. One press will easily keep two or even three fires at work. The glutting fires, besides the ordinary smith's forge on which the wheel is heated, standing in a vertical position, have another smaller fire at the back (a divisional wall being between them) for heating the glut iron.

A better class wheel than that just described is one in which the hub, spokes, and rim are welded up into a single forging (see fig. 10). "Thickback" spokes are generally used in making these wheels, that is, the spoke is rolled with a thick part in the centre, a tapering part to form the spoke, and a lug or thick part at the ends, which will form the hub. Eight doubled spokes are assembled together, when they present the appearance shown in the lower half of fig. 10. They are then bound firmly together by a hoop or clamp having two long handles. The spaces between the hub ends of the spokes are packed with pieces of iron, thus wedging the whole firmly into the hoop. The wheel is now placed upon a circular bossing forge, a sketch of which is given in fig. 13. This consists of a cast-iron circular casing and top, lined with fire brick and ganister, and leaving a hole in the centre of about 9 in. diameter. Two tuyeres on opposite sides give entrance to the blast and a draw-plate at the bottom allows the fire to be broken down into the ash-pit when required. A kind of fire-clay dish is suspended over the wheel by a pulley and balance weight, and reflects the heat downward, and can be drawn aside when the wheel is hot. Having been brought to a welding heat, the assembled spokes are taken to the steam-hammer or hydraulic press, as the case may be, and welded to two iron washers placed under and over the spokes, the washers having been heated in readiness in an adjoining furnace.

A sketch of the bossing press is given in fig. 14. It is supplied with rams, both for the top and bottom tools, and has also a high-pressure ram, not shown in the engraving, by which the pressure can be increased to upward of 500 tons, the low pressure rams are employed to bring the tools up to their work, and the high pressure is put on for the final squeeze. The small ram at the top is for the purpose of bringing back the top tool after its work is done. The washers are generally of hammered scrap iron, but in some places ordinary bar iron is coiled into a ring in a coiling machine. After the operation of glutting, which has already been described, the wheel has the appearance shown in the

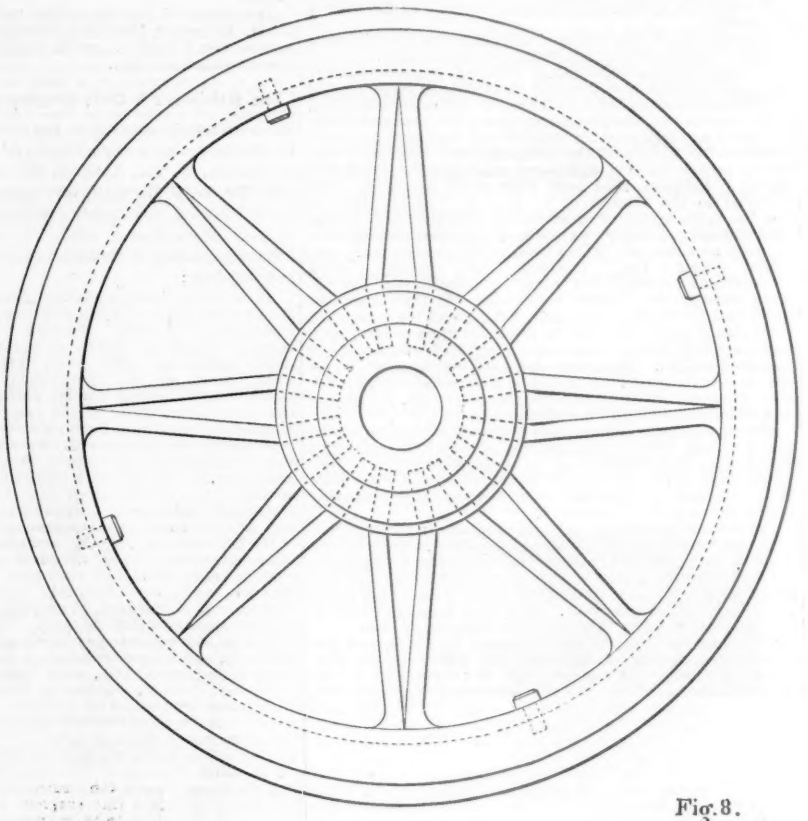
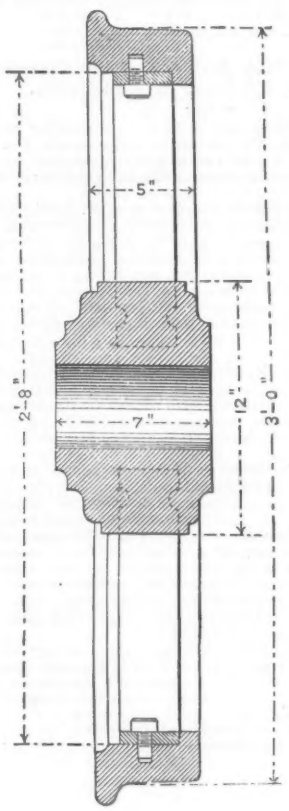


Fig. 8.



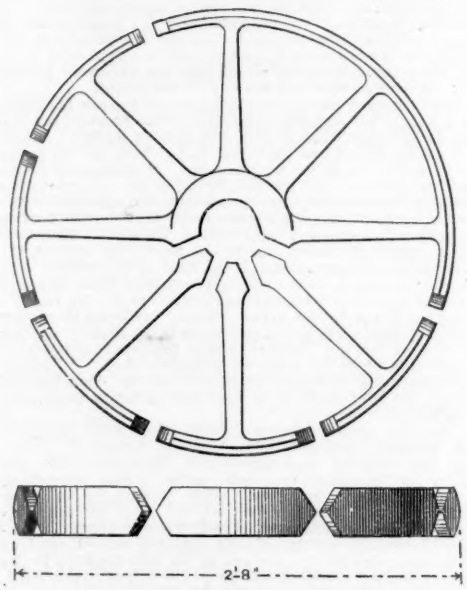


Fig. 9.

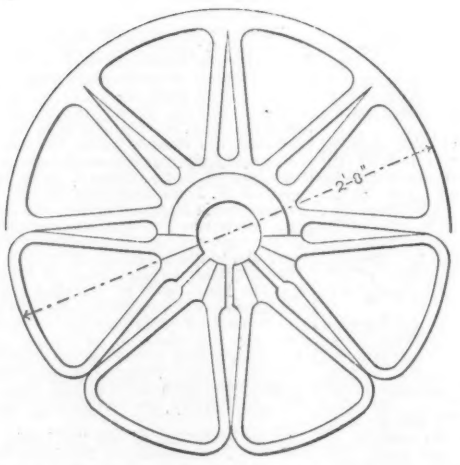


Fig. 10.

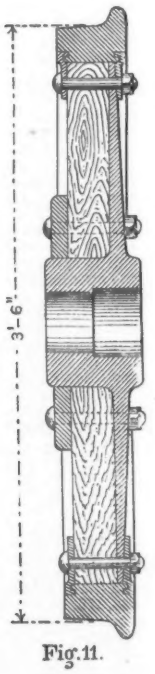


Fig. 11.

ENGLISH RAILWAY WHEELS.

upper half of fig. 10, and, if the welds are perfect, is then a solid wrought-iron structure.

The machine work then commences; the rim is turned up, the hub or "boss" bored out and faced, and the key-way cut by special machines, and the wheel is now ready for "hooping" or shrinking on the tires. These, after being bored to the correct size, are slightly warmed in a furnace, and dropped on to the centre, a contraction of about 1-32 in. being allowed for a 36 in. wheel. Wheels with wrought-iron hubs for freight cars are often simply forced on the axle by hydraulic pressure and are not keyed. Keys are, however, found necessary in wheels with cast-iron hubs. The wheel centre or skeleton should be forced on the axle before the tire is shrunk on, but wheel-makers generally object to this practice as being likely to split the hub. Railroad companies, on the other hand, wish to have any defective hubs split at once before the wheels are put in use, and find that where the wheel is forced on the axle after the tire is on, the tires are more apt to become loose. After the tire is shrunk on, the holes for rivets or screws are drilled by horizontal machines specially made for the purpose, which drill two holes at a time, at opposite sides of the wheel. Where set-screws are used the holes are then tapped.

The wheels are forced on their axles at a pressure of from 40 to 60 tons by means of a hydraulic press. They are then riveted or bolted, and having been turned on flange and tread in a wheel lathe are ready for work.

Solid-spoke wheels of the form shown on fig. 9 are lately coming more into favor, especially since the use of continuous brakes became general. On the London & Brighton Railway, they are used for both passenger and freight cars. They are generally made with taper spokes, each welded to a bar which forms part of the rim. These spokes as assembled together are shown in the lower half of fig. 9. The left-hand upper quarter of this figure shows the next stage, the boss or hub being welded up, and the right-hand upper quarter of the wheel is shown finished, the disconnected portions of the rim being welded up by the insertion of V-shaped pieces between them. The whole process of manufacture of these wheels much resembles that needed in Great Britain for locomotive drivers, which are to be described and illustrated in a future article.

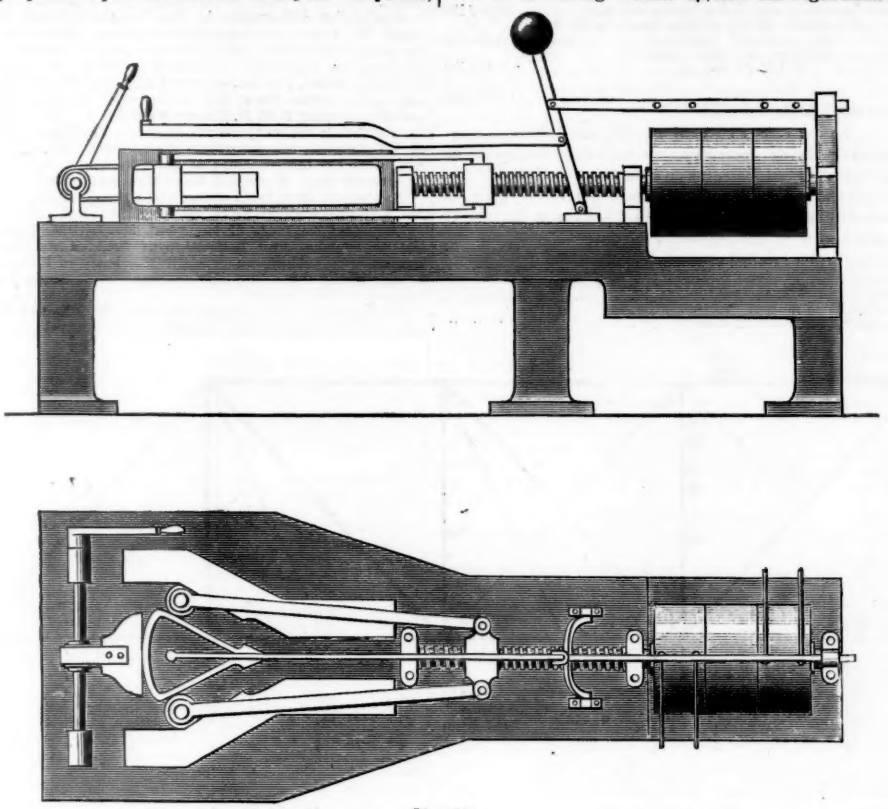


Fig. 12

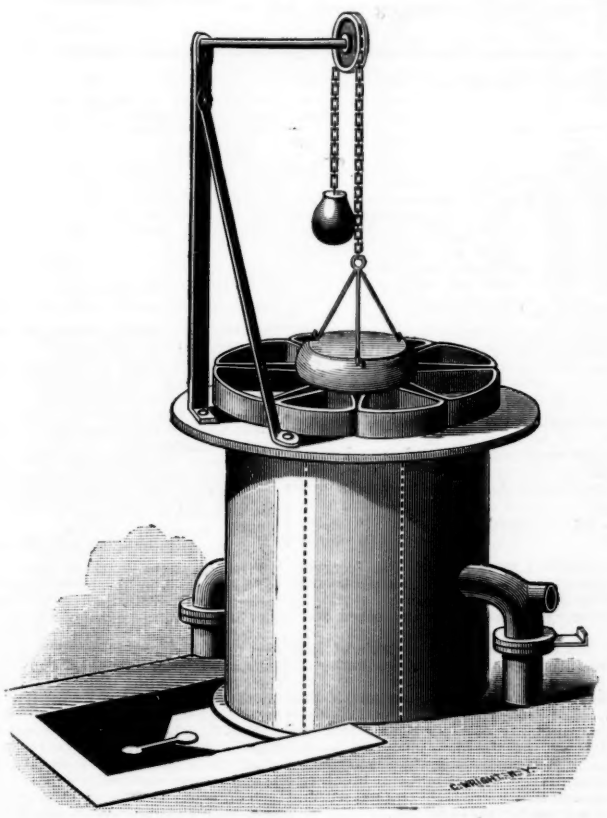


Fig. 13.

ENGLISH RAILWAY WHEELS.

Another process known as the "cold-spoke," or Owen & Dyson's patent, differs from other methods in heating the washers but not the spokes, so that when the welding hot washers are forced together they flow around, and between the spokes, and form a solid wrought-iron hub in which the spokes are imbedded in a somewhat similiar manner to pouring cast-iron around them. The spokes for this process are generally made of a diamond section, being thicker in the centre than at the edges. Wheels made in this manner cost no more than those with cast-iron hubs, while the weight is somewhat less. Disk wheels made from a wrought-iron plate are also used to a limited extent, the plate being flanged over to form the rim and receive the tire, and a boss forged on the centre in a similar manner to spoke wheels.

The usual form of Mansell wood wheel for passenger cars is shown in fig. 7. The principle of the wheel consists, first, in substituting a disk of timber for the ordinary metallic spokes, thus deadening the noise and vibrations caused by running over even a good track at high speed, and secondly, in securing the tire by two continuous rings to the body of the wheel, so that, should the tire break, no portion of it can get away. The Mansell fastening has been singularly successful in this respect, as we believe no case is on record of a broken tire leaving the wheel.

The separate parts consist of the tire, two retaining rings (securing the tire to the body of the wheel), sixteen wood blocks, which take the place of spokes, a hub or boss of cast iron, and a follower or hub ring, sometimes made of wrought iron, but more generally of cast iron, with the necessary bolts for securing the hub and follower to the wood blocks, and the latter in turn to the retaining rings which grip the tire.

The tires are bored out to a slight taper for the wood blocks, and are grooved on the sides for the ribs of the retaining rings. The latter are made from bars rolled to the proper section, and cut off to the right length, heated in a furnace, and bent into a hoop by a machine; then welded into a ring under a press and placed hot into a horizontal

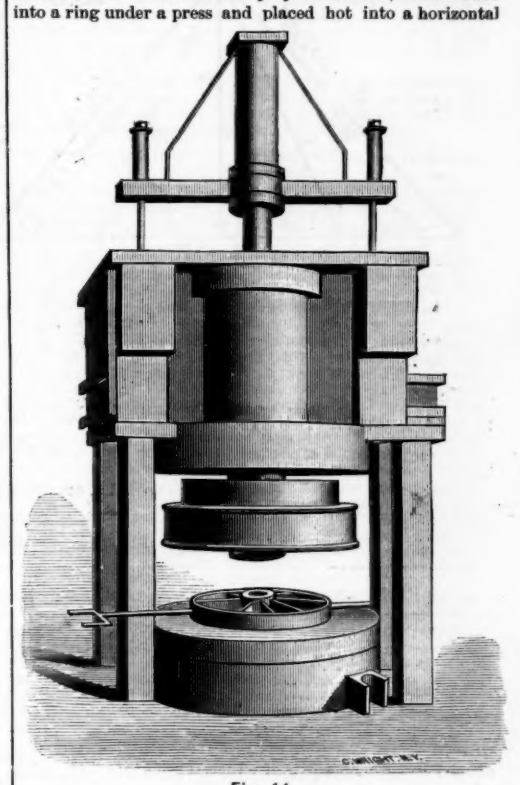


Fig. 14.

ENGLISH RAILWAY WHEELS.

blocking machine, for the purpose of making them accurately round. This machine acts by means of segment blocks, which are forced outward against the ring by a vertical screw acting on a wedge. The recesses are then cut in a lathe, and the holes drilled through a steel bushed template. The wood blocks are of East Indian moulmein teak, a hard, slightly oily wood which shrinks little and is not much affected by atmospheric changes, and is not injured by contact with iron or rust. The teak planks are cut into segments by a band saw, after having been dressed to a thickness in a planing machine; the proper bevel is given them by a gauge attached to the saw table. The hubs and their rings are now turned up, the hub being made slightly taper to assist the operation of forcing the blocks into the wheel, which is done by a hydraulic press at a pressure of about 80 tons. The edges of the blocks are left rough from the saw, to cause them to grip one another, and the blocks being slightly larger than the tire, a tight fit is insured. The bolts are put in and screwed up, and the end riveted over the nuts, and the wheel forced on its axle and keyed up.

With regard to the comparative merits of wood-centre, and iron-spoke wheels for passenger cars, many years' experience in England and on the Continent have proved that the wood-centre wheel runs more smoothly and silently and is less destructive to tires and axles than wrought-iron spoked wheels. The comparative wear and breakage of steel tires on both kinds of wheels is well shown in the following:

Table of Experiments made on the Eastern, Paris & Lyons, and other French Railroads.

	Iron.	Mansell.
Total No. of pairs running	71	52
Total No. of pairs turned	250	210
Axle miles	5,672,727	9,110,411
Average No. of axle miles between turnings	22,688	43,383
Average weight on each wheel	2,666	3,205
No. of renewals of tires	45	21
Stoppages *en route* for defects in tires	16	5
Miles run per stoppage	354,545	1,823,082

The report of these results says that the quality of the

steel tires was rather better on the iron than on the Mansell wheels. There were 10 tires broken on the iron wheels and none on the Mansell wheels, but in four cases washers became loose.

The general adoption of the continuous brake in England during the last ten years has thrown a severe torsional strain on the wheels, the consequence of which is that several instances have occurred of their giving way by the boss twisting and tearing itself away from the woodwork at the line of bolt holes passing through the hub. Cases have also occurred of the wood centres slipping round in their tires, caused probably from the heating of the tire by the brake blocks. To avoid these defects several improvements have been tried, some of them with perfect success. In Kitson's patent improved Mansell wheel, fig. 2, the boss is of wrought iron, having a large disk forged on one side, which completely covers the woodwork, the edges of the disk being bolted to the retaining rings of the tire, but leaving a space between the disk and the inside of the tire, so that the elasticity is retained. This wheel, being of wrought-iron, is much stronger than Mansell's, and the hub is connected to the retaining rings independently of the wood-blocks. It is, however, heavier and slightly more expensive than an ordinary Mansell wheel. Many other varieties of this wheel are in use, having slightly different methods of securing the hub to the wood centre. As generally used under English passenger cars these wheels are loaded with about 9,000 lbs. on a pair of wheels. That is to say, a six-wheel coach will weigh about 27,000 lbs, and a four-wheel coach about 20,000 lbs. These are average weights, as some exceptionally long six-wheeled coaches running weigh as much as 34,000 lbs.

Investigation of the Fall of a Wooden Bridge on the Southern Central Railroad.

The New York Board of Railroad Commissioners have recently completed an investigation, given in substance below on the fall of the wooden bridge shown in outline in the accompanying illustration. The bridge was one of three spans, 111 feet each, resting upon the crib piers, which are still in good condition. The south end of the north span gave way Feb. 14 last, just as the pilot of the engine was passing on to the piers. The engine was a mogul, followed by tender, loaded box car, empty box car, caboose and passenger car. The whole train but the passenger car, which escaped, was precipitated into the river, the water being 22 ft. deep. The engineman, fireman and a brakeman were drowned. The Commission find, in substance, that although the bridge was of somewhat objectionable design and would at the best have been both unequally strained and somewhat over-strained, yet that the catastrophe appears to have been immediately due solely and only to imperfect adjustment and negligent inspection. The report points out that the particular design of this bridge was especially liable to suffer from imperfect or careless inspection and adjustment. Unfortunately the report is marred by several serious blemishes, which are spoken of elsewhere, and its whole reasoning is based upon an erroneous computation of strains, and hence largely falls to the ground in respect to this particular bridge when these errors are corrected. The following includes all essential parts of the report:

The bridge was originally built in 1871 by Kellogg & Maurice; it was rebuilt 18 months ago by the railroad, new wooden members being substituted for the old ones, but the same old iron used over again.

A calculation of the strains at the time the bridge gave way shows the following results:

The loads were distributed as shown in outline sketch and give an average rolling load of only 1,340 lbs. per foot of bridge, or about one-half of what bridges are generally calculated to bear.

The concentrated rolling load due to the engine is, of course, calculated separately.

Assuming the above data to be correct, we have the following:

Let W = panel (18 ft. 6 in.) static load per truss..... 10,175 lbs.
Let W' = panel (18 ft. 6 in.) moving load per truss.... 12,395 lbs.
Let W'' = engine load on 9 ft. 3 in. per truss..... 13,567* lbs.

*The last quantity is reached as follows:

Distance C of middle driver to centre forward driver..	7.16 ft.
" " " " " " " rear " " ..	8 ft.
Assuming centre driver over any point of intersection of web members with lower chords, we have..	10,167 lbs.
Centre of forward driver to next panel point 2.091	
∴ 9.25′ : 2.09′ : : 10,167 : 2,290, say.....	2,300 lbs.
Centre *rear* driver to next panel point 1′	
∴ 9.25′ : 1′ : : 10,167 : 1,090, say.....	1,100 lbs.
	13,567 lbs.

[This last line should read:

9.25′ : 1.25′ : : 10,167 : 1,370, say 1,400.

This error being corrected has the effect to slightly increase the computed strains on members 1, 2 and 3. The computed strain for 4 is radically incorrect. We give the correct strains beneath the diagram.—EDITOR RAILROAD GAZETTE.]

This would give maximum strain on member 1, having 1.76 sq. in. cross section ($\frac{1}{2}W + W''$) sec. α = 18,654 × 1.1 = 20,519, or.....	11,600 per sq. in.
On number 2, $\frac{1}{2}W + W''$ = 18,654 lbs., or. ...	10,700 " " "
On number 3, same as number 1.....	11,600 " " "

On No. 4 an inspection of the diagram will show in addition to the strain from the static and average moving load, a strain resulting from 4.6 of ½ of the weight of the engine on 9 ft. 3 in. + ½ of 9 ft. 3 in. = 13ft. 10½ in.

This is equal to $\frac{13.87}{15.16}$ of one-half the weight of the engine on the driving-wheel base, or 27,900 lbs., and would occur just before the centre driver reached the panel point. We would thus have an equation for the strain as follows:

$$\left(\frac{9}{6}W + \frac{6}{6}W' + \frac{4}{6}27{,}900\right) \text{ sec. } \alpha' =$$

(15,264 + 12,395 + 18,600) 1.36 = 62,912 lbs. [correct strain 62,912 lbs.—EDITOR], or about 13,100 lbs. per sq. in. [correct strain, 11,430 lbs.].

There was sufficient margin of safety in the other web members.

The compression on the end posts shows a strain of less than 400 lbs. per sq. in., abundantly within the limits of safety.

The material in the chords was also abundant, if the splices were all right.

It is thus seen that the greatest strain per square inch on any member was 13,100 lbs. on the main diagonal No. 4. While this was 3,000 more per square inch than good construction would warrant, it was far within the breaking limit, which is 50,000 lbs. to the square inch or even within the elastic limit, which is from 20,000 to 25,000.

The above calculations, however, are made upon the basis that the bridge was in perfect adjustment and that each member bore the strain intended to be brought upon it.

Had such been the case, the bridge could not have broken down with the weight of the train at the time of the catastrophe, unless there was some hidden defect in the iron.

No evidence as to that fact has been adduced. A piece of one of the rods exhibited to the board showed a good fibrous structure, and that fracture had only taken place when bent considerably more than 90° on a curve whose radius was but little more than the thickness of the bar.

On the other hand, the iron in the old bridge had been used, and it is quite possible that some of it had been strained beyond its elastic limits and its strength impaired.

The probabilities are, however, that the bridge was not in accurate adjustment. The construction of the bridge was not good, although not infrequent.

The subsidiary diagonals running to intermediate instead of to panel points is faulty. If the nut on the end of each rod, upon which the lower chord rests, gets loose, the member fails to play its part. The rigidity of the lower chord, acting as a beam, transmits the weight to the next suspension rod, and thus doubles the strain thereon. This is one of the many reasons why an eye-bar and pin is preferable to a rod and nut.

It is always a difficult matter to determine if tension members are doing their exact proportion of the work when the lower chord is rigid; it is much increased in such construction as the above, when diagonals run to intermediate panel points. It may be pertinent to say that there is an instrument lately invented by Wm. H. Paine, C. E., of the Brooklyn Bridge, which measures to a nicety the elongation of any iron member in tension, and shows to within a few pounds per square inch the strain it is under. It would be invaluable in determining whether a bridge of such construction as the one under consideration was in true adjustment.

Again, the differences in the lengths of rods 3 and 4 cause No. 4 to expand more and contract more than No. 3 by reason of heat or cold. On the basis of rolled iron expanding one-eighth of an inch in 1,562 ft. for each degree of temperature, rod No. 4 would contract six-hundredths of an inch more than No. 3 through a range of 120°, rod No. 4 being 5.25 ft. longer than No. 3. If adjusted in August (with the temperature in *the sun* in the neighborhood of 120 degrees, to conform to the length of No. 2, in February, with the temperature at zero, it would have been 0.6 in. shorter than it should have been to conform to No. 3.

This would have been enough to have loosened the nut on No. 3 to an extent to have allowed it to shake still looser.

The Chief Engineer of the road, Mr. Swart, testified that the supervision and inspection of bridges was under his special care; that he was in the habit of looking at the bridge about once a month, but that he had not adjusted the nuts since last August.

The Inspector of the Board reported that the end diagonals of one of the spans left standing were very slack, showing that the very careful inspection necessary to make a bridge of this construction safe had very likely not taken place.

If rod No. 4 was so loose as not to do its work, and the strain thereon was transmitted to rod No. 3, it would unquestionably have ruptured it.

Had any two of rods 1, 2 or 3 been loose, so as to throw triple work on the remaining rod, it would have been most likely to rupture it.

It is more than probable that one or other of the above conditions obtained at the time of the disaster.

The exact cause of the downfall of this bridge is obscure, but sufficient is developed to justify the Board in the following

CONCLUSIONS AND RECOMMENDATIONS.

First. That the Southern Central Railroad was at fault for using old iron in rebuilding the bridge.

Second. That Mr. Swart, the Chief Engineer of the road, was in fault in not more frequently adjusting the bridge.

Third. That the construction of the bridge is faulty, and that it is only safe when subjected to the most careful and constant inspection; that the members marked 1, 2, 3, 4 and their corresponding members in the other panels of the span now standing are at any time liable to a greater strain than that under which the bridge gave way, by reason of a greater rolling load being liable to come upon the bridge at any time; a strain of from 14,000 to 16,000 lbs. per square inch of section is liable to be induced at any time on member No. 4; and strains materially exceeding 10,000 lbs. per square inch on other members; that consequently new web members, with adequate cross section, should be substituted for the present ones, or the bridge rebuilt at the earliest moment practicable, and that in the meantime the utmost care should be taken in running trains over it.

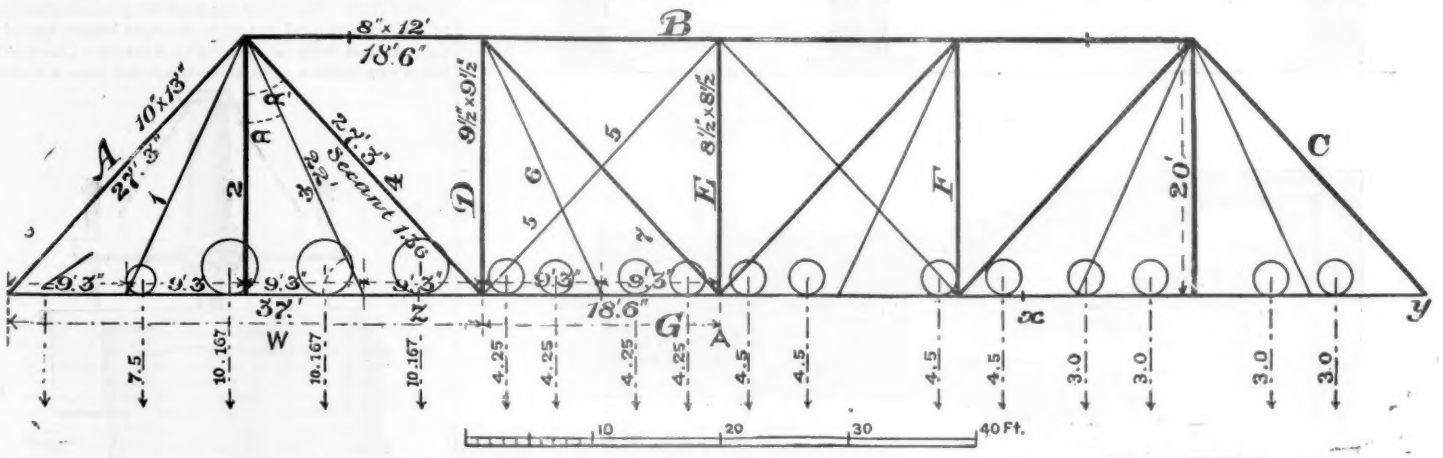


DIAGRAM OF WOODEN BRIDGE OVER SENECA RIVER AT WEEDSPORT, N. Y., ON SOUTHERN CENTRAL RAILROAD.

Dead load, 550 lbs. per ft. of single truss; live load (ex engine), 670 lbs.

The loads given are in lbs. per wheel, and the train is shown, as nearly as may be, in the position it occupied at the instant the bridge gave way.

Dimensions of Members.			Strain per sq. in.	
Wood.	Iron.		As per report.	Correct strain.
A..... ... 2 timbers, 10″ × 13″	1..... .. 1 rod, 1¼″ ○, 1.76 sq. in.		11,600	11,850
B..... .. .. 2 " 8″ × 12″	2..... .... 1 " 1½″ " 1.76 "		10,700	10,800
D..... .... 1 " 9½″ × 9½″	3..... .... 1 " 1¼″ " 1.76 "		11,600	11,850
E..... .... 1 " 8½″ × 8½″	4..... .... 2 " 1⅜″ " 4.8 "		13,100	11,430
G { ..... 1 " 11″ × 15″	5..... ... 1 " 1⅝″ " 2.07 "		.....	12,340
G { ..... 2 " 8″ × 15″	6..... .... 1 " 1¼″ " 1.76 "		.....	.....
	7..... .... 1 " 1⅝″ " 2.07 "		.....	.....

Transportation in Congress.

In the Senate on the 17th:

Mr. Wilson (Iowa), offered the following preamble and resolution, which at his request were permitted to lie on the table, to be called up in a few days for reference to a committee:

"*Whereas*, The constitution delegates to Congress power to regulate commerce with foreign nations and among the several states and with Indian tribes, therefore be it

"*Resolved*, That it is competent for Congress in the exercise of power so delegated, to provide by law such regulation of the transportation of commerce among the several states as shall include a system of maximum and minimum rates of charge for the same for free competition within limits so fixed; for prohibition of discrimination of any kind whatever, either in favor of or against cities, towns or other loca-

tions, whether the same be competing or non-competing points; for applying the same principles to transportation for individuals, firms, associations or corporations in all matters relating to commerce among states; for the preservation and enforcement of the right of shippers to select lines and parts of lines over which their shipments shall pass, to the end that shippers may avail themselves of all rail or part rail and part water routes of the country; for the prevention of such pooling arrangements and agreements to refrain from just competition as may tend to impose unreasonable burdens upon such commerce between states; for the protection of such commerce against unjust exactions based on a class of securities commonly denominated watered stocks, and for the promotion of the true interests of both the corporations employed in such transportation and people and localities engaged in such commerce by the enforcement of the principles hereinbefore stated and thereby induce harmony and stability in the affairs of such corporations, people and localities."

In the House on the 17th:

A bill was passed authorizing the construction of a railroad bridge across the St. Croix River in the states of Wisconsin and Minnesota.

TECHNICAL.

Locomotive Building.

The Boston & Maine shops are building four new locomotives for the road, the first of which has been completed.

The Rogers Locomotive Works in Paterson, N. J., recently delivered four freight engines to the Louisville, New Albany & Chicago road.

The Pittsburgh Locomotive Works recently delivered two freight engines to the Cincinnati, Van Wert & Michigan road.

The Mason Machine Works in Taunton, Mass., are building several passenger engines with 18 by 24 in. cylinders and 68 in. driving wheels for the Boston & Providence road. The boilers of these engines are of steel, the barrel being 54 in. in diameter. The fire-box is 78 in. long and 35 in. wide inside. The driving wheel-centres are 9 ft. apart. The Trucks have Allen paper wheels.

An effort is being made to organize a company to build locomotive works at Anniston, Ala. It is proposed to build shops having a capacity of 125 locomotives a year.

The Old Colony shops in Boston have completed a new passenger engine with 18 by 24 in. cylinders and 72 in. driving wheels. The engine is equipped with the Westinghouse automatic brake and other improvements. It is to run the Vineyard express in the summer.

The Baldwin Locomotive Works in Philadelphia are building 38 engines for Brazil and the Argentine Republic. About 200 men were discharged last week, and it is said that more will soon be laid off.

Car Notes.

The Laclede Car Manufacturing Co., in St. Louis, is building an addition to its works, 60 by 118 ft. in size.

The Wason Car & Foundry Co., in Chatanooga, Tenn., is building a number of freight cars for the Alabama Great Southern road.

The Swissvale Car Co., at Swissvale, Pa., has closed its shops for the present.

The Knoxville Car Wheel Co., at Knoxville, Tenn., is running its works extra time to fill some large orders.

Bridge Notes.

The Kansas City Bridge and Iron Co. has taken a contract to build a Howe-truss bridge of 150 ft. span over Blue River, near Kansas City, Mo., for the Belt Road.

The Pittsburgh Bridge Co., in Pittsburgh, has orders enough on hand to keep its shops busy for four months. The company is now shipping the iron for a street bridge in St. Louis, which is to be 1,500 ft. long.

The contract for the steel beams and girders for the new office of the County Clerk of Jefferson County at Watertown, N. Y., has been awarded to C. H. Kellogg, contractor, of Buffalo, N. Y. Mr. Kellogg also has the contract for the iron doors, shutters and stairs, together with all the fireproofing.

Iron Notes.

The Lookout Rolling Mill, in Chattanooga, Tenn., will continue in operation and will not shut down, as has been reported.

A dispatch from Youngstown, O., April 21, says: "A meeting of creditors of Brown, Bonnell & Co., owning the largest rolling mill in the country, at present in the hands of a receiver, to-night rejected a proposition of the stockholders to settle for 50 cents on the dollar or the full amount in stock in the new organization. A committee of five of the principal creditors was appointed to further consult the mortgage creditors and stockholders for final action and report at a meeting to be held here on April 19. Cleveland creditors offer the principal opposition to the organization. The mills, with a dull iron market, cleared $98,000 last year."

The large furnace of the Crozen Iron Co. at Roanoke, Va., which has been undergoing repairs, will go into blast in a few days.

The Pittsburgh Steel Casting Co., on April 4, rolled in six hours 92,940 lbs. of shaped deck beam blooms.

Cherokee Furnace at Cedartown, Ga., will continue in blast until about June 1, and then will shut down for repairs. After the repairs are completed the furnace will be started up again, using coke instead of charcoal as fuel.

The property of the Allentown Iron Co., in Allentown, Pa., will be sold at public sale on May 7, under foreclosure proceedings by the bondholders. This company has been in existence since 1857, when it was incorporated as successor to the firm of Bevan & Humphrey, which had operated a furnace at Allentown for 11 years previously. The business was gradually extended until the present large works were in operation, and the capital of the company had been increased to $1,000,000. For several years large dividends were paid, but the company has never recovered from the panic of 1873, and its operations since that date have not been very successful.

The Scranton Steel Company in one week recently with two four-ton converters produced 1,378 gross tons of ingots, working only six turns of 10 hours each. During those six turns the rolling mill turned out 1,247 tons of rails.

A Pittsburgh dispatch of April 19 says: "There was a conference of the Amalgamated Association and the manufacturers this afternoon. Contrary to expectations it resulted in a disagreement. The workmen demanded the present rate of wages, $5.50 per ton for puddling, continued, with the exception of an extra dollar a ton for axle iron, which was dropped, and also presented additions and amendments which, it is claimed, will increase wages of certain classes of workmen from 5 to 20 per cent. The manufacturers peremptorily refused to accept the workmen's proposition, and demanded a uniform reduction of 10 per cent., which is claimed necessary on account of eastern competition and depression of trade. Workmen denied the reduction was necessary; also denied their scale provided for any increase. The discussion lasted three hours, when it was decided that agreement was impossible. Both sides profess to be firm in their position. If one or the other does not yield work will be suspended at all of the mills in the West after June 1."

Manufacturing Notes.

The Gelatinized Fibre Co., which has heretofore manufactured fibre goods in Brooklyn, N. Y., has been consolidated with the Vulcanized Fibre Co., of Wilmington, Del. Hereafter all goods will be manufactured at the works of the company in Wilmington and all the general business of the company will be conducted in that city.

The Chapman Valve Co. at Indian Orchard, Mass., is running its shops to their full capacity. A number of new tools have lately been put in.

The American Electric Headlight Co. has been organized at Indianapolis with Louis Miller, President; J. W. Carpenter, George N. Wheeler, Vice-Presidents; Leonard Moore, Secretary; B. W. Raymond, Treasurer. The new company will control the Wooley, Lynn and other electric headlight patents and will establish works on a large scale, probably at Akron, O.

The office of the Graydon & Denton Manufacturing Co., makers of rock drills, power meters and dynamometers, is removed from No. 1 Park place to Nos. 13, 15 and 17 Cortlandt street, New York.

The Rail Market.

Steel Rails.—The market is somewhat stiffer, although prices are quoted unchanged at $33 to $34.50 per ton at mill for rails of ordinary section. Sales amounting to about 20,000 tons have been reported recently, the highest price named being $35.50 per ton delivered at Pittsburgh. Considerable business has been done in light rails, which are quoted at $35 to $39 per ton, according to section.

Rail Fastenings.—Spikes are still quoted at $2.50 per 100 lbs. in Pittsburgh, although the market is weak and sales are reported to have been made at lower prices. Track-bolts are quoted at $2.75 to $3 per 100 lbs., and splice-bars at 1.65 to 1.80 cents per lb.

Old Rails.—Very few sales are reported, and prices are difficult to quote. Some sales are said to have been made at $22 per ton for old iron rails in Philadelphia, and another sale of American rails is reported at $22.50 in Pittsburgh.

British Rail Exports.

For the month of March and the three months then ending the exports of iron and steel rails from Great Britain to the United States are reported as follows by the Board of Trade, in tons of 2,240 lbs.:

	March.			Three months.		
To United States:	1882.	1883.	1884.	1882.	1883.	1884.
Iron rails	2,508	979	.....	16,675	2,169	.....
Steel rails	19,757	3,712	1,523	56,035	12,711	6,857
Total	22,265	4,691	1,523	72,710	14,880	6,857
To all countries:						
Iron rails	4,473	2,028	551	22,646	9,334	3,064
Steel rails	57,269	66,003	40,869	170,419	183,365	119,779
Total	61,742	68,031	41,420	193,065	192,699	122,843

The exports to this country in March were not only 60 per cent. less than last year and 92 per cent. less than in 1882, but were smaller than in any other month since July, 1879. For the three months they were not half as great this year as last, and not one-tenth as great as in 1882.

The total British exports in March were 39 per cent. less this year than last and 32½ per cent. less than in 1882, and for the three months they were 36 per cent. less this year than last of the years before. The decrease in exports to countries other than the United States has now become decided. These have been:

March.			Three months.		
1882.	1883.	1884.	1882.	1883.	1884.
39,477	63,340	39,897	120,355	177,819	115,986

But the exports to these other countries compare well with years previous to last. The countries which for the quarter have taken a much smaller quantity this year than last are Italy, Mexico, the Argentine Republic, Canada, Cape Colony and India. The Australian colonies, on the other hand, took somewhat more this year than in 1883 or 1882, and more than any other country, but were followed closely by India, with Brazil and the Argentine Republic next. The exports to Mexico were only 521 tons this year, against 9,864 last year and 7,866 in 1882.

In 1882, during the first three months of the year, 36¾ per cent. of the total British rail exports were to this country; this year, only 5.6 per cent.

Stay-bolt Taps.

In the construction of boilers it has always been difficult to secure good taps of sufficient length for the stay-bolt holes. The Pratt & Whitney Co., of Hartford, Conn., has, by years of trial and experiment in the manufacture of these taps, overcome in a great degree the difficulty of producing them true in pitch and straight throughout their length. They can now be furnished of any length from 12 in. to 54 in., and of any desired diameter and pitch.

Protecting Live Stock.

The American Humane Association was started in 1877 for the purpose of protecting live stock in transit, says a report of the organization: "What the cruelty was, and is, of live stock transportation many know. The common cattle cars are on the same pattern as the first merchandise cars ever built, except that slatted doors and sides have been substituted, to allow a freer circulation of air—as if 'air,' important as it is, was all the change required when living freight was substituted for dead matter! In the beginning of this live stock trade the railroads had no other cars, and no one dreamt it would ever reach its present magnitude; but that beginning was long ago, even in 1877. In the meantime, Congress, moved by its abuses, had passed a law 'to protect animals during transportation.' This law required all animals to have five hours' rest after every 28 hours' confinement in the cars. The law humanely provides, however, that when cars are constructed so that the animals can be fed, watered and have rest in them, railroads shall be released from the obligation to have the animals unloaded from such cars. One of the early practical questions considered was, How can we get such a car as the law and humanity require—a car, that is to say, which will make unloading of the cattle while on their journey unnecessary? Would not a prize for such a car awaken the inventive talent of the country? It was determined to try, and $5,000 was soon subscribed and paid into the hands of trustees for the purpose. That sum was offered as a prize, one condition being that the patent, or patents, should belong to the association, in order that the car might go to the railways free of charge for royalty. In answer to this offer the judges received 480 models and 243 plans of cars. Unexpectedly, however, the owners of the best cars had discovered, or believed they had discovered, that their cars were worth to them more than the $5,000, and for that reason would not compete for the prize. And so it could not be awarded. The important and gratifying fact, however, was that it called into existence improved cars which meet the requirements of the law. The association has sent agents from time to time as far West and South as cattle are shipped to gather facts, and has published the reports. Local agents have been maintained at Albany and Buffalo. This year the association offers to help local societies to maintain agents at the largest stock-yards of the country, as far as its means will permit. Such agents are instructed to make accurate observation of what is done, to correct abuses as far as they can and to report to the proper railroad officers and to their societies the constantly recurring facts."—*Boston Herald.*

Night Schools for Apprentices.

The Baltimore & Ohio Railroad Co. is making arrangements, it is said, to open a night school for the benefit of the apprentices and young men employed at the Mount Clare Shops in Baltimore, following in this the excellent example set by the Brooks Locomotive Works. The instruction given will be chiefly technical and of such a character as may be best adapted to help the students to improve in their work.

Cable Railroads in New York.

The New York Cable Railway Co. has been organized to build the various lines of cable street railroad laid out by the Rapid Transit Commission. It is probable that there will be a good deal of litigation before the company is allowed to begin work. The legality of the commission and the extent of its authority will be called in question, and must be settled before anything else can be done.

Fast Time.

A special passenger train which left Cincinnati at 10 a. m. on April 20 over the Cincinnati, New Orleans & Texas Pacific line, with excursionists to the convention of the Knights of Pythias, reached New Orleans at 9:20 a. m. the next day, making the run in 23 hours and 20 minutes. The distance by this line being 826 miles, the average speed, without allowance for stops, was 35.4 miles per hour. But it is claimed that the train was delayed for some time near Chattanooga by an accident to another train, and that, deducting this delay and the time occupied by necessary stops to change engines and take water, the actual running time was only 19 hours and 50 minutes, or an average of 41.7 miles an hour.

The total running time, 23 hours and 20 minutes is 4 hours and 55 minutes better than the time made by the special train run over the Louisville & Nashville line at the time of the Mardi Gras festival in New Orleans.

Standard-Gauging the Philadelphia & Atlantic City Railroad.

When control of the Philadelphia & Atlantic City (narrow gauge) Railway was acquired by the Philadelphia & Reading Company it was decided to change the gauge from 3 ft. 6 in. to 4 ft. 9 in. Workmen have been engaged since February in making the change, and about 25 miles of the new track have now been laid. The special traffic of the line, summer excursion business, makes a heavier rail as well as a broader gauge expedient, so that the usual difficulty of a change of gauge is much reduced. The new steel rails weigh 72 lbs. per yard (having a much wider base than is customary) and are laid to break joints. At each joint two cross ties 8½ ft. long are laid, in place of the old 7-ft. ties, the joints being "swung" or suspended. This gives nine or ten short ties and four long ties to each 30-ft. rail. The short ties will be replaced by long ones as rapidly as circumstances permit. The joints are composed of double angle-splice bars, the outer rails being laid while the road is in operation as a narrow-gauge road. The switches and frogs for sidings are distributed already, and the rails spiked in track now being arranged so that but little time will be consumed in putting in the new frogs and switches, which is the only operation that will affect the running of trains. It is hoped to have the gauge widened before the season opens.

A New Baggage Check.

E. Wygant, General Baggage Agent of the Grand Rapids & Indiana Railroad, has recently invented and patented a baggage check made of heavy leather, not materially different in size and style from the ordinary brass checks, except that it is a little larger, and has an open pocket for the baggage car directions. The utility of the invention is embraced in two printed cards attached to the tickets purchased. On these cards are the names of the line or lines of railway over which the passenger goes. The ticket purchased has attached to it two cards, one for the baggageman and the other for the traveler. The are precisely alike, and the baggageman, on being required to check baggage for one point to another, tears the two printed checks from the passage ticket and gives one to the baggage owner and places the other in the leather check pocket attached to the baggage. Already the Grand Rapids & Indiana Railroad Co. adopted the new invention.

London City Traffic.

The Metropolitan Railway now issues 72,000,000 tickets yearly, of which 80 per cent. are third-class, averaging 3.5 cents per ticket. An addition to the system, about 3 miles long, called the Parks Railway, is now proposed, at a cost of about $6,225,000, nearly 40 per cent. of which is for land damages and cost of new streets. The proposed line connects the oval formed by the Metropolitan lines from north to south, forming in connection with it two approximately circular systems.

On the New York elevated railroads the number of passengers is now about 90,000,000 per annum, and the average fare paid about 6½ cents, being 5 or 10 cents, according to the hour of the day.

THE SCRAP HEAP.

A Narrow Escape.

The Elmira (N. Y.) *Gazette*, of April 16, says: "Yesterday as Erie train No. 12 neared Salamanca and ran on to a bridge the engineer noticed that the structure all was afire. It was too late to stop, so he put on a full head of steam and hastened across. The train had barely left the bridge when the ties and a portion of the structure fell into the stream below. It was a narrow escape from a most horrible catastrophe, and but few of the passengers were aware how near death's door they were."

Memories of an Old Bridge.

The bridge over Big Eagle Creek, on the National road, which was burned a few nights ago, was one of a series devised especially for that road by the late Lazarus B. Wilson, of this city, and built by contract by William Wernwag and Walter Blake about the same time that the old river bridge was built in 1832-33. It was little over a half century old when it was destroyed, a good long life for a structure of greater apparent solidity and durability than a bridge of wooden arches and poplar weather boarding. An iron bridge in 1832 would have been little less amazing than a golden one in the "New Purchase." Now we rarely have anything else unless it be a mixture of iron and timber like the Vincennes bridges. Marion County was but 10 years old when that bridge was built, and the first incorporation of Indianapolis was made the same year. The first and only steamer that ever came up White River came the year before and came near never getting out, and about the time work

upon bridge abutments began the last military demonstration ever made east of the Missisippi by Indian hostilities was made by Col. Alex. W. Russell's "Bloody Three Hundred," among other volunteer bodies called out by the government. A bridge very like the burned one was built over Pogue's Run at the same time, but was torn away when the improvement of Washington street was begun, 35 years ago or more, and replaced by an open wooden bridge the width of the street, with foot-walks on each side which, in its turn, was replaced by the present arched stone culvert. Indianapolis was a mere village when that old bridge was built. It had almost 2,000 population, its first town government by trustees, no street known by its name, and none known by any name but Washington, and that was called Main street; corn fields over most of the south side south of Maryland, except along Meridian, where the Morrises held chief sway, and Illinois, where a scattering house preserved the form of a street. Worm fences and cow paths, mud holes and street stumps, with occasional trees were visible everywhere north and south. That old bridge looked on strange changes in its time.—*Indianapolis News.*

A Singular Accident.

On Monday evening a locomotive, with a work car attached, started out the Cleveland, Lorain & Wheeling road. When near Patton's tunnel the engineer saw the St. Clairsville accommodation coming toward him full tilt. He immediately reversed his engine and jumped. The two trains came together, but were not heavy enough to cause any disaster. The passengers were slightly shaken up and scratched, and that was the sum total of the injuries. The reversed engine, on coming in contact with the St. Clairsville train, stopped short, and having plenty of steam flew away on the way home. A railroad official being on the St. Clairsville accommodation, rode back to Maynard and telegraphed to the Wheeling Creek Coal Works to stop the runaway, which they fortunately did before any damage was done. Altogether it was a singular accident and singularly free from loss of life where so many were in peril. —*Wheeling Intelligencer, April* 16.

Boy Train Wreckers.

Three boys from Sayre, named James Beers, James Hicks and George Hicks, were arrested by Officer Burns and brought to this place and lodged in jail. They were arrested for letting the brakes off of a lot of freight cars that stood on a switch not far from Sayre. The cars ran down a grade of about 50 feet to the mile for some distance and then jumped the track. It was just about the time for No. 9 to pass, and a man who was a witness to this performance realized the danger and flagged the train just in time to prevent an accident that might have cost many lives. The boys were taken before 'Squire Bishop, of Sayre, and he sent them down here to board with Sheriff Horton until May court.—*Towanda (Pa.) Review.*

A Lost Road Found.

A large increase in the earnings of the Louisville & Nashville may be looked for this month. The piece of narrow-gauge track missing so long was found sticking in the top of a tree, hauled down, and placed in its own little niche, and the toot of the juvenile locomotive is once more heard echoing gleefully through the hills and dales of Harrod's Creek.—*Louisville Courier-Journal.*

He Meant What He Said.

On the train from Cincinnati to Chattanooga the talk of the mob of six or eight in the smoking car ran to train robbery. The subject was canvased from every standpoint, and all but one agreed that a passenger car could be robbed without danger to the robbers. This chap was selling drugs for a Baltimore house, and he announced his readiness to lay down his life whenever an attempt was made to deprive him of his cash. It was generally believed that his courage was all talk, and by and by when he fell asleep we put up a job on him.

A giant of a chap from Dayton, O., was selected to play robber. He was about the ugliest looking white man any body had ever set eyes on, and he borrowed two revolvers, removed the cartridges and waited for the right moment. As the train stopped at a little station the big fellow opened and slammed the door and cried out:

"Hands up, gentlemen! The first one of you who drops a hand is a dead man!"

Up went our hands, and the drugman awoke.

"Up with 'em—throw 'em up!" commanded Dayton as he leveled both shooters at the drummer and slowly advanced.

"Not if I know meself!" was the cool reply, and what did the Marylander do but out with his revolver and began popping away! He had fired four shots and driven the "robber" to the door before any one could grab him and explain matters One bullet went through the big man's cap, a second burned his check, and the third and fourth went through the windows. He was whiter than snow as the affair ended, and returning the revolvers to their owners he stood up in the aisle and said:

"Gentlemen, you can put me down as the biggest blamed fool in America! Good-night!"

And he took his coat and grip and left us for a seat in another coach.—*Detroit Free Press.*

Had Him There.

It doesn't follow that because a man is a monopolist he can't say an occasional good thing.

Fred Crocker recently refused a pass to a sort of peripatetic humbug, who indignantly demanded to be informed how long the railroad crowd proposed to "grind the faces of the poor."

"I don't think *you* need be alarmed," retorted young Crocker; "we are not workers in brass."—*San Francisco Evening Post.*

The Safest Part of a Car.

A party of merchant travelers in a passenger coach were talking over their traveling experience and the danger of accidents, and finally the question arose as to the safest part of the car. Failing to settle the question among themselves they called upon the conductor, and one of them said to him: "Conductor, we have been discussing the matter of the safest part of the car and want to know your opinion." "Want to know the safest, eh?" replied the conductor. "Yes, that's it." "Well," replied the conductor, borrowing a chew of tobacco and looking disappointed because he didn't get a cigar, "I've been on the road for 15 years, and I have been turned over embankments, busted up in tunnels, dumped off bridges, telescoped in collisions, blown off the track by cyclones, run into open switches, and had other pleasant incidental divertisements of kindred nature, and I should say, gentlemen, the safest part of the car was that part which happened to be in the shop for repairs at the time of the accident."—*Exchange.* Probably other old railroad men will be inclined to indorse this opinion.

A Ticket-Scalper's Little Game.

There is a story out of an ingenious scheme used by a Toledo ticket-scalper to defraud the Lake Shore road of several thousand dollars. As is well known the baggageman upon checking a piece of baggage, punches the ticket with a big big B, which in no way affects its value in passing a passenger over the road, as the conductor punches it with his own little punch upon taking it up. This ingenious scalper perfected an arrangement with a conductor by which he handed all the tickets he collected which were not marked with the baggageman's punch. The scalper then took a baggageman's big punch and bored a hole through the ticket with it, cutting out the smaller mark of the conductor's punch, and behold the ticket was good for another passage. The trick was discovered by observing that many tickets sold on a certain date would not be returned in the conductor's collections for a month or more. The participants in the scheme were discovered and discharged.—*Toledo Commercial Telegram.*

ANNUAL REPORTS.

The following is an index to the annual reports of railroad companies which have been reviewed in previous numbers of the current volume of the *Railroad Gazette:*

Chicago, Burlington & Quincy.

The total mileage of road operated by this company at the close of its last fiscal year, Dec. 31, 1883, was:

	Miles.
Roads owned, including all branches	3,224.214
Roads leased and worked jointly with other companies, or for which a fixed yearly rental is paid	98.293
Total	3,322.507

Additions during the year were 93.605 miles, as noted in detail elsewhere. The average mileage worked for the year was 3,254.569 miles, of which 1,998.627 miles were east, and 1,255.942 miles west of the Missouri River.

The equipment consists of 542 locomotives; 253 passenger, 1 state-room, 5 dining and 97 baggage, mail and express cars; 14 495 box and stock, 4,365 flat and coal and 261 caboose cars; 9 officers' and pay cars, 13 boarding, 7 wrecking and 5 pile-driver cars; 962 hand and 673 push cars.

Additions made during the year include 20 locomotives; 19 passenger cars; 270 box and stock, 246 flat and coal and 4 caboose cars; 1 officers' car and 4 boarding cars; 52 hand and 31 push cars.

The general account, condensed, is as follows:

Stock		$71,941,246.51
Funded debt		71,384,490.86
Contingent liabilities for branch lines		6,024,000.00
Unpaid accounts, vouchers and pay-rolls		1,660,607.89
Profit and loss		5,844,213.57
Renewal fund		6,500,000.00
Income account		9,236,222.95
Sinking funds		7,623,526.04
Total		$180,214,307.82
Construction accounts	$100,876,947.78	
Cost of branch roads	35,852,962.36	
Securities held to protect leases	120,227.34	
Cost of investments in controlled roads	25,093,286.62	
Sundry investments	369,755.02	
Materials on hand	1,584,042.23	
Sinking funds	5,755,130.56	
Sundry available securities	5,093,171.00	
Accounts, bills receivable, etc	3,247,142.44	
Cash	2,221,841.67	
		$180,214,307.82

Changes in stock were the issue of $1,550 in exchange for convertible bonds and scrip, and $2,290,000 in exchange for Republican Valley stock. This $2,290,000 issue remains in the company's treasury.

The funded debt was diminished by the redemption of $468,000 bonds of various issues, and was increased by the issue of $228,000 Burlington & Missouri River (in Nebraska) bonds for bonds of branch roads, and of $9,000,000 plain 5 per cent. bonds and $440.86 bond scrip for purchase of Hannibal & St. Joseph stock; making a net increase of $8,760,440.86 in the bonded debt during the year.

The report says: "The entire property of the company on Dec. 31, 1883, was as follows:

Permanent investment in construction	$136,850,138
Materials on hand	1,584,042
Amount held for account of sinking funds in other than our own cancelled securities	5,755,131
Cost of investments in Hannibal & St. Joseph; Kansas City, St. Joseph & Council Bluffs; Humeston & Shenandoah; St. Joseph & Des Moines; Chicago, Burlington & Kansas City; St. Louis, Keokuk & Northwestern, and other branch road securities	25,093,287
Sundry investments	369,555
Sundry bills and accounts receivable, securities, etc., over and above bills and accounts payable and suspended debts (this includes C. B. & Q. stock in treasury $2,290,000, and cash $2,221,841)	8,559,687
	$178,211.839

Against which stand:

Capital stock	$71,941,246	
Bonds of all issues (including those of branch roads) outstanding	77,408,491	
		149,349,737
Showing cost of property in excess of stock, bonds and all other liabilities		$28,862,102

Expenditures for new construction and permanent improvements of the road during the year were $2,757.408; for new equipment, $575,598, making a total of $3,333,006.

The Land Department reports in Iowa sales of 7,644 acres for $88,229. The cash received during the year was $492,653 and the expenses were $18,855. The assets include land contracts to the amount of $1,032,953 and 21,175 acres of unsold lands.

In Nebraska the sales were 182,637 acres for $844,712. The cash receipts were $1,654,369, and the expenses $58,581. The department holds land contracts amounting to $3,720,084, and 182,415 acres of unsold lands, estimated at $4 per acre.

TRAFFIC.

The only statements of traffic given in the report are as follows:

	1883.	1882.	Increase.	P. c.
Passengers carried	4,123.638	3,852,208	271,430	7.0
Tons freight carried	7,645,701	6,346,259	1,299,442	20.5

The number of passengers does not not include those carried on mileage or season tickets. The freight tonnage includes Illinois Central tonnage carried over this road in Illinois Central cars, 368,955 tons in 1883 and 330,716 tons in 1882.

The average rate per ton-mile was 1.2 cents, a slight decrease from the previous year.

EARNINGS.

The earnings for the year were as follows:

	1883.	1882.	Inc. or Dec.	P. c.
Freight	$19.513,161	$15,711,510 I.	$3,892,651	24.2
Passengers	5,285.839	4,756.993 I.	528,846	11.1
Mail, etc	1,310,369	1,082,302 I.	228.067	21.1
Total	$26,110,369	$21,550,805 I.	$4,559,564	21.1
Expenses	13,496,478	11,283,963 I.	2,212,515	19.6
Net earnings	$12,613,891	$10,266,842 I.	$2,347,049	21.9
Gross earnings per mile	8,023	6,953 I.	1,070	15 4
Net earn. per mile.	3,876	3,312 I.	564	17.1
Per cent. of exps.	51.7	52.4 D.	0.7	...

Taxes are included in expenses in both years.

Renewals east of the Missouri included 70¼ miles of steel rails, making 1,316 miles (including all the main lines) laid in steel. There were 6½ miles of new second track and 16¾ miles of new siding built. West of the Missouri 144 miles of iron were replaced by steel and 40¼ miles of new track laid with steel rails, making in all 573½ miles of steel now in the track.

The result of the year was as follows:

Net earnings, as above		$12,613.891.50
Interest and exchange		324.180.15
Total		$12,938,071.65
Rentals paid	$144,505.66	
Interest on bonds	4,093 065.21	
Sinking funds	646,430.00	
		4,883,940.87
Surplus income		$8,054,130.78
Dividends, 8 per cent	$5,506,484.20	
Carried to reserve fund	1,500,000.00	
		7,066,484.20
Balance		$987 646.58
Net receipts, land grant in Nebraska		1,595,788.10
Balance, Jan. 1, 1883		6,652,788.27
Balance of income, Jan. 1, 1884		$9,236,222.95

The net earnings were thus sufficient to pay all charges and 8 per cent. dividends, carry $1,500,000 to renewal fund, and leave nearly $1,000,000 surplus.

NEW BRANCHES.

The report says: "During the year new roads and extensions have been built in whole or in part as follows:

"In Illinois, an extension of the Chicago & Rock River road from Rock Falls to Sterling, completed and opened for business Oct. 8, 1883, ¾ mile.

"In Nebraska:

"An extension of the Republican Valley Railroad, from Tecumseh west to Beatrice, completed and opened for business Sept. 2, 1883, 32.94 miles.

"An extension of the Republican Valley Railroad, from Nemaha south to Salem, completed and opened for business Dec. 20, 1883, 17½ miles.

"An extension of the Republican Valley Railroad from Aurora west to Grand Island, about 19½ miles, begun in December, 1883, to be completed in 1884.

"The Nebraska & Colorado Railroad, from DeWitt west, grading partly done, and 9 miles of track laid in 1883. About 25 miles were put under contract to be completed in 1884.

"A branch of the Nebraska & Colorado Railroad, from Chester north to Hebron, nearly completed at the end of the year, and opened for business Jan. 3, 1884, 11.25 miles.

"A branch of the Nebraska & Colorado Railroad, from Kenesaw, southwest to Oxford, about 62 miles—40 miles, from Kenesaw to Holdrege, completed and opened for business Nov. 15, 1883. The remaining 22 miles are partly graded and will be completed in 1884.

"The Chicago, Iowa & Kansas Railroad, from Odell southwest to Concordia, partly graded, will be completed in 1884, about 67 miles.

"Of the 398.4 miles of road provided for in the circular of Sept. 15, 1881, 369.85 miles were completed and in operation on Dec. 31, 1883, leaving the coal road in Colorado, 28.55 miles in length, which will probably be built during 1884.

"The actual length of road in operation Dec. 31, 1883, was 3,322.5 miles, against 3,228.9 miles Dec. 31, 1882.

GENERAL REMARKS.

"In addition to this mileage the company controls and practically owns the Hannibal & St. Joseph Railroad, consisting of 292.35 miles, and other roads mentioned in the summary of property above. These roads continue to be operated by the corporations owning them, and neither the earnings, expenses, statements of rolling stock nor other figures relative to them are included in this report; and they have during the year 1883 earned about $1,000,000 surplus, after paying their own operating expenses and interest on their outstanding liabilities not owned by the Chicago, Burlington & Quincy Co., which surplus has been partly used in making improvements upon the properties and adding to their rolling stock. The acquisition of the Hannibal & St. Joseph Railroad was believed to be the best solution of the Southwestern question, and it places us in a strong position at Kansas City, the great and growing commercial centre of that region.

"The increase in earnings in 1883 over the previous year is due, in part, to the increase of 155 miles in the average amount of road operated during the year. It will be remembered that the Denver Extension was opened May 29, 1882, so that we had the benefit of it for only seven months of that year. But a more important cause of increase is to be found in the growth of business on many miles of road acquired in 1880, 1881 and 1882. We carried into Chicago in 1883 30,000,000 bushels of corn, against 15,000,000 the year before, 26,000,000 in 1881, and 40,000,000 in 1880. The corn crop in Illinois, Iowa and Missouri in 1883 has not turned out well. The yield is estimated to have been a little larger than in 1882, but the quality of a considerable portion of it, owing to a late spring and an early and wet autumn, is inferior, rendering it more or less unfit for transportation. West of the Missouri River the quality averages better, and the yield in 1883 was larger than in any previous year.

"The average rate of freight earnings per ton-mile during the year was 1.2 cents, being a little less than in 1882. In the year 1872 the average rate was about 2 cents, and the average cost per ton-mile 1.3 cents.

"The wages of labor in 1883 were somewhat higher than

in 1882, but the cost of most of the materials used was rather less.

"Land sales during the year show about the same prices as the year before, with a less quantity of land sold, as was to be expected."

The report says nothing of the troubles with the Union Pacific and the Iowa roads, and the tripartite agreement is not mentioned in it. Very little is said of the prospects or intentions of the company for the present year.

Atchison, Topeka & Santa Fe.

This company's report for the year ending Dec. 31 last, gives the following statements concerning the company's properties, which, for purposes of operation, are divided into the following systems:

1. The parent line and its auxilliaries, called the Atchison System, with a mileage in Missouri, Kansas, Colorado, New Mexico, and Texas of 1,820.47 miles.
2. The Southern Kansas System, all situated in Kansas, of 398.58 miles.
3. The Sonora System, lying in the territory of Arizona, and in the state of Sonora, Mexico, 350.19 miles.
4. The lines owned jointly with the Union Pacific Railway Co., both in Kansas, half mileage, 51.46 miles.

The figures given below are for the Atchison system, except where otherwise noted, the statements for the other lines being given separately.

The mileage of the Atchison road, Jan. 1, 1883, was 1,820.47 miles; and no addition was made to the mileage operated during the year.

The equipment consists of 349 locomotives (105 passenger, 2 chair, 35 emigrant sleeping and 70 baggage, mail and express cars; 4,364 box, 717 combination, 901 stock, 925 flat, 2,351 coal and 113 caboose cars; 3 officers' cars, 2 pay cars and 22 service cars. The company also owns one half interest in 22 Pullman sleeping cars.

The general account is as follows, condensed:

Stock (including $2,950 scrip)		$56,913,250.00
Funded debt		25,887,000 00
Interest accrued, Feb. dividend, etc.		1,634,194.08
Suspended accounts		447,889.40
Land grant trust		668.925.43
Accounts and balances payable		1,537,288.08
Insurance fund		253,107.31
Renewal and improvement account		500,000.00
Income account		5,754,478.75
Canceled bonds		1,436,000.00
Total		$95,032,133.05
Road and equipment	$37,850,631.56	
Interest in leased and auxiliary roads	46,839,550.00	
Materials and supplies	1,725,426.87	
Sundry securities and investments	546,710.75	
Bonds for construction of leased roads	4,274,000.00	
Sundry accounts receivable	1,795,134.97	
Atlantic & Pacific Co. notes	900,000.00	
Cash	1,100,678.90	
		95,032133.05

The above assets are exclusive of the bills receivable for sales of land to Dec. 31, 1883, amounting to $1,390,774, and the value of 1,247,744 acres of unsold lands.

The outstanding bonded indebtedness of the leased roads is not charged in the liabilities of the Atchison Co., as the value of the Atchison Co.'s interest in the leased roads, which appears in the assets, is exclusive of the value covered by these bonds.

In addition to the funded debt above there are $11,939,000 bonds of leased roads, and $5,448,000 bonds of the Southern Kansas Co. The company also guarantees $690,000 Leavenworth, Topeka & Southwestern, and $4,050,000 Sonora Railway bonds.

During the year $3,600 stock was issued in place of scrip canceled. There were $1,500,000 of the sinking fund secured 6 per cent. bonds sold, and $854,500 bonds of various issues redeemed, making a net increase of $645,500 in funded debt.

A condensed view of the general account is as follows:

Stock		$56,913,250
Bonded debt		25,887,000
Total		$82,899,250
Construction	$84,690,182	
Materials	1,725,427	
Available assets over floating liabilities	3,575,120	
		89,990,729
Surplus of assets over stock and bonds		$7,190,479

This surplus is invested in the permanent improvements and additions to the Atchison Co.'s road charged to its construction account.—in the excess of mortgage bonds, other securities, and cash in the treasury of the company over its current liabilities, and in the material on hand as given above.

EARNINGS.

The earnings for the year were as follows:

	1883.	1882.	Inc. or Dec.	P. c.
Freight	$10,374,012	$10,537,201	D. $163,189	1.6
Passengers	3,097,121	3,662,576	D. 565,455	15 4
Mail and express	532,384	477,639	I. 54.745	11.5
Miscellaneous	113,831	95,889	I. 17,942	18.7
Total	$14,117,348	$14.773.305	D. $655,957	4.4
Expenses	6,748,218	8,637.256	D. 1.889.038	21.9
Net earnings	$7,369,130	$6,136,049	I. $1,233,081	20.1
Gross earn. per mile	7,755	8,138	D. 383	4.7
Net " "	4.048	3.380	I 668	19.8
Per cent. of exps	47.80	58.46	D. 10.66	....

Expenses include taxes paid, which were $319,988 last year.

The report says: "The marked decrease made in nearly every class of expenses is due mainly to two causes.

"1. A more compact and therefore more economical organization for the operation of the road under which nearly every class of expenses for conducting traffic was reduced. This was rendered possible from the fact that the construction of extensions had been practically completed.

"2. The large expenditures upon the property in the years 1881 and 1882, the causes for which were fully explained in the annual report for the year 1881, whereby the property was placed in excellent condition, rendered it possible, as was indicated in that report, to adopt for 1883 a fair average expenditure for repairs and renewals of roadway, bridges, buildings, cars and locomotives. The following figures give the facts in regard to this class of expenditures on the road during the last 10 years:

	Repairs and renewals per mile.		Repairs and renewals per mile.
1874	$404	1879	$1,341
1875	441	1880	1,456
1876	653	1881	2,587
1877	814	1882	2,533
1878	1,149	1883	1,651

"It will be seen that the expenditures in 1881 and 1882 for repairs and renewals were far beyond the average. It was to be expected that, after these large expenditures in 1881 and 1882, this class of expenses would be reduced to a fair average."

The result of the year's operations was as follows:

Net earnings, as above		$7.369,130 11
Rentals, dividends, interest, etc.		408,817.08
Land grant trust for interest on land grant bonds		204,394.94
Total		$7,982,342.13
Pool accounts paid other roads	$423,202.02	
Discount on bonds sold	37,500.00	
Interest on bonds	1,746,109.68	
Interest on bonds of leased and auxiliary roads	863,330.00	
Rental of rolling stock	25,500.00	
Dividends, 6 per cent.	3,414.567.00	
Depreciation of materials	200,000.00	
Carried to renewal fund	500,000.00	
Carried to insurance fund	250,000.00	
		7,460,208.70
Balance, surplus, to income account		$522,133.43
Balance, Jan. 1, 1883		5,232,345.32
Balance, Jan. 1, 1884		$5,754,478.75

Expenditures charged to construction and equipment account were as follows: In building new auxiliary lines, $1,848,145; in additions and improvements to old auxiliary lines, $378,461; advances for lands and buildings belonging to companies whose entire stock is owned by the Atchison Co., 109,921; additions and improvements to Atchison road, $1,208,959; total, $3,545,486.

The operations of the Land Department during 1883 were as follows: 431,756 acres were sold, at an average price of $3.56 per acre, for the sum of $1,538,511. The cash receipts of the department during the year were $1,390,881. The expenses of the department were $164,543, the taxes $75,883, making total disbursements for the year $240,426.

The net results of the operations of the year were therefore $1,150,455. In addition to this there was received from interest and profits, less sundry expenses of the trust, $28,560, making a total of $1,179,015. Of this amount there was paid for interest on land grant bonds $204.395, leaving a balance for the year of $974,620, which, with the balance of the land grant and land income trusts at the close of 1882, amounting to $373,005, was used for the purchase and cancellation of $438,500 land income and $209,000 of land grant bonds; and the balance, amounting to $668,925, has been set aside for the purposes of the trust and secured to the trustees by collateral. All the land income bonds have been redeemed and canceled.

TRAFFIC.

The traffic for the year was as follows:

Train miles:	1883.	1882.	Inc. or Dec.	P.c.
Passenger	1,938,724	2,344.992	D. 306.268	13.7
Freight	3,425,234	3,533,292	D. 108,058	3.1
Service and switching	3,007,620	3,089,178	D. 81,558	2.6
Total	8,371,578	8,867,462	D. 495,884	5.6
Pass. carried	790,644	725,926	I. 64.718	8.9
Pass-miles	106,029,301	108,048,356	D. 2,019,055	1.9
Tons freight carried	1,754,385	1,575,149	I. 279.236	18.9
Ton-miles	520,751,467	460,608,539	I. 60,142,928	13.1
Av. train load:				
Pass'g'rs. No.	55	48	I. 7	14.6
Freight, tons.	152	130	I. 22	16.9
Av. rate:				
Per pass.-mile.	2.921 cts.	3.390 cts.	D. 0.469 ct.	13.8
Per ton-mile	1.992 "	2.288 "	D. 0.296 "	12.9

Locomotive service cost 19.16 cents per mile run, 3.64 cents being for repairs and 7.16 cents for fuel.

Of the passengers carried 52.6 per cent., and of the tons carried 52.0 per cent. were west-bound. The average passenger journey was 134.1 miles; the average freight haul was 296.8 miles.

The freight traffic for three years past was divided as follows:

	1883. Ton-miles.	1882. Ton-miles.	1881. Ton-miles.
Commercial tonnage	485,890.425	375,516,260	285,648,715
Material for construction, for leased and connecting lines	34,861,042	85,092,279	110,768,148
Total ton-miles	520,751,467	460,608,539	396,416,863

From this statement it will be seen that the ton-mileage of construction materials decreased largely, while the commercial traffic last year showed a gain of 29.4 per cent. over 1882, and of 70.1 per cent. over 1881.

The expenses for last year are divided as follows:

	Amount.	Per mile road.	Per mile rev. train.	P. c. of gross earn.
Maintenance of way	$1.784,586	$980	$0.33	12.64
Maintenance of buildings	174 727	96	0.03	1.24
Maintenance of rolling stock	1,045,713	574	0.20	7.4[illegible]
Transportation and traffic	3,102,080	1,704	0.58	21.97
General expenses	321,124	177	0.06	2.27
Taxes	319,988	176	0.06	2.26
Total	$6,748,218	$3,707	$1.26	47.80

The expenses were largely reduced, as noted elsewhere. The figures per train mile above are for revenue trains only, excluding service and switching mileage, and including the total expenses of all kinds in the calculations.

LINES OWNED JOINTLY WITH UNION PACIFIC.

These lines are the Manhattan, Alma & Burlingame, from Burlingame, Kan., to Manhattan, 53 62 miles, and the Leavenworth, Topeka & Southwestern, from Leavenworth to Meriden Junction, 46.30 miles. The operations of these roads were as follows:

	M., A. & B.	L., T. & S. W.
Earnings	$52.953	$62.534
Expenses	42,373	85,785
Net or deficit	N. $10,580	D. $23,251
Gross earnings, per mile	935	1,351
Net " "	187	....
Per cent. of expenses	80.0	137.2

The Atchison Co. receives one-half of the tonnage, or bears one-half of the loss, as the case may be, on these lines.

SONORA SYSTEM.

The Sonora system includes the New Mexico & Arizona road, from Benson, Arizona, to Nogales, 87.78 miles, and the Sonora road, from Nogales to Guaymas, Mexico, 262.41 miles. The earnings of these lines were as follows:

	N. M. & A.	Sonora	Total.
Earnings	$137.235	$220.506	$357,741
Expenses	142,384	314.001	456,385
Deficit	$5,149	$93,495	$98,644
Gross earnings per mile	1,563	840	1,022
Per cent. of exps	103.8	142.4	127.6

The report says: "There has been expended on construction account of the Sonora Railway during the year $206,531.

"The amount of cash subsidy in American currency received during the year was $155.830, making the total amount received from the Mexican Government $1,092,775, leaving a balance still due of $1,447,755.

"It will be remembered that the first-mortgage bonds authorized to the extent of $20,000 per mile, $5,000 per mile were retained in the treasury for the cost of additional construction, and for any deficiency of earnings to meet the interest charges and operating expenses.

"The business of the Sonora Railway during the year 1883 has suffered seriously from an epidemic fever never heretofore known in Sonora, which prevailed during the last half of the year. It is believed that the future prospects for business on this road are improving. The company has now under contract a steamship which will be completed in June, 1884, and will be put into the coast business south of Guaymas.

During the year 1883, important changes were made by the Mexican Government in the concessions granted to the Sonora Railway. Under these changes the railway which has already been constructed is rendered secure in all its rights and properties. Extended time has been given for earning the additional subsidies."

SOUTHERN KANSAS SYSTEM.

The average mileage of this system operated in 1883 was 398.58 miles, as against 392.70 miles in 1882.

The net receipts from the land grant of this road in 1883 were $43,168.

The general account of the Southern Kansas Co. is as follows, condensed:

Stock		$3,759,900.00
Funded debt		5,798,000.00
Accounts and balances		413.456.86
Income account		285,179.06
Canceled bonds		81,000.00
Total		$10,337,535.92
Road and equipment	$9,839.349.69	
Materials	58,235.95	
Trustees' accounts	42.078 50	
Cash and accounts receivable	397,871 69	
		10,337,535.92

The funded debt includes $1,089.000 divisional bonds; $1.769,000 Southern Kansas & Western bonds and $2,940,000 Kansas City, Lawrence & Southern bonds.

The equipment in use includes 25 locomotives; 17 passenger and 10 baggage cars; 551 freight and 11 caboose cars; 1 wrecking car. Some additional equipment is leased from the Atchison Co.

The earnings for the year were as follows:

	1883.	1882.	Inc. or Dec.	P. c.
Freight	$1,325.183	$932.267	I. $392,916	42.2
Passengers	405,829	347.058	I. 58 771	17.0
Mail, etc	61,081	57,379	I. 3,702	6.5
Total	$1.792,093	$1,336,704	I. $455,380	34.1
Expenses	904,698	724,512	I. 180,186	24.9
Net earnings	$887,395	$612,192	I. $275,203	44.9
Gross earn. per m.	4.496	3,404	I. 1,092	32.1
Net earn. per mile.	2.226	1,559	I. 667	41.5
Per cent. of exps.	50.48	54.20	D. 3.72	....

Taxes are included in expenses; they amounted to $90,331 last year. Renewals included 873 tons of steel rails and 77,956 new ties.

The income account for the year was as follows:

Net earnings, as above		$887.394.73
Net land receipts		43.167.93
Miscellaneous receipts		44,511.73
Total		$975,074.39
Interest and sinking funds	$400.630.00	
Leased rolling stock	200,000.00	
Rentals	31,830.74	
Dividends, 6 per cent	224,604.00	
		857.064.74
Surplus for the year		$118,009.65

There was expended on this road for permanent improvements and additions to property the sum of $70,163, which was charged to construction accounts.

GENERAL REMARKS.

The report says: "The year has been a prosperous one. The road has been fully maintained at low cost and improvements made in many important particulars. Additional steps of substantial character have been taken toward strengthening and advancing the line as one of the important western railroad systems. Nearly $2,000,000 have been spent in the construction of new branch lines, and over $1,500,000 in substantial improvements upon the old lines. These and other results have been accomplished without naturally increasing the obligations of the company.

"The Atlantic & Pacific Railroad was completed to the Needles in October. A connection was then and there made with the Southern Pacific Railroad. The route between the East and San Francisco had, at the close of the year, been opened for three months. Thus far it has not secured that proportion of traffic which its merits demand, and which it will eventually obtain.

"The Mexican Central Railway, another important connection of this line, was nearly completed to the city of Mexico at the close of the year; and, at the time of writing this report, through connections have been established between that city and the United States, promising an important addition to our through traffic.

"The other business connections of the road and its own local interests are in good condition.

"Early in the year the Legislature of Kansas passed an act for the regulation of railroads in that state. Under the provisions of this law the maximum rate for the transportation of passengers, upon all lines within the state, was arbitrarily placed at 3 cents per mile. The effect of this enactment has been not only to reduce our earnings on local passenger traffic within the state (for which possibly some commensurate advantage will arise in a proportionate increase in travel), but this reduction in Kansas affects also our proportion of the through rates on interstate and transcontinental travel.

"Under the provisions of this law a foundation was also laid for the regulation of freight charges, and experiments have been made in the enactment of freight tariffs. These experiments have brought forth results which have gone far to show how closely allied are the interests of the state with the interests of its railroads and how greatly it is to the interest of the state that the roads should have freedom in their commercial operation. Facts and figures have demonstrated that, even in the case of this road (the only reasonably successful railroad enterprise in Kansas), the returns received in every form since its inception have not nearly been equal to those received from other less hazardous investments in the state. Even this measure of success has only been achieved by us as the result of traffic brought *across* the state through our enterprise exerted elsewhere. The following figures illustrate this fact: The total freight earnings in the state of Kansas in 1883 were $6,319,787, but of this amount only $1,325,192 were earned on business between points in Kansas; earnings on business to or from Kansas points going to or from points in states east were $1,817,686; on business to or from Kansas points to or from points west of that state were $519,299, and the remaining amount of $2,657,610 was earned on business going only across Kansas, and not to or from any point in that state.

"We have large interests in Kansas. We have faith in the intelligence and justice of its people, and we believe that they will accord to us that fair dealing and protection given to other citizens of the state."

RAILROAD GAZETTE

Published Every Friday.

EDITORIAL ANNOUNCEMENTS.

Passes.—*All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.*

Contributions.—*Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to* ALL DEPARTMENTS *of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.*

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APPLYING NET EARNINGS TO CONSTRUCTION AND PAYING DIVIDENDS OUT OF CAPITAL.

At the annual meeting of the Cleveland, Columbus, Cincinnati & Indianapolis Railway Company last month, an association of English stockholders, owning 34,435 shares of stock (23 per cent. of the whole), presented resolutions which were to the effect that as the company had reported a large excess of net earnings over fixed charges paid, and an expenditure of more than $3,000,000 of net earnings for additions to the property, the directors were requested to pay a cash dividend equal to the excess of net earnings over fixed charges in 1883, and to declare that the shareholders are entitled to dividends to represent all the net earnings which heretofore have been expended on capital account. Mr. James McHenry also appeared before the board and advocated a stock dividend to cover these latter expenditures.

The board thought this matter important enough to warrant a special investigation and report, and President Devereux, Cornelius Vanderbilt, and Stevenson Burke were appointed a committee to make the report, which is issued this week, and will doubtless attract much attention in England, where the practice is universal of paying for additions out of new capital (authority for raising which is first given by the shareholders), and dividing substantially the whole of the net earnings every year, be the same large or small. The report of the Cleveland Company's committee makes a pamphlet of 21 pages, which is fortified by statistics from the past history of the company, many of which we presented when reviewing the annual report of the company a year ago. The conclusion arrived at is not, however, a *general* answer to the complaint against expending net earnings on capital account, but only an answer for the special case under consideration. The committee reports against making any stock dividend to represent past expenditures of this kind, or any cash dividend from the profits of 1883; but it is largely relieved from the necessity of considering the subject on principle, for the reason that it finds that in past years millions of dollars provided by new issues of capital were used in paying dividends, so that when the stockholders were going without their dividends of late years they were only paying for what they had unwarrantably received previously. This of course is a condemnation of the management which paid dividends out of capital; but the committee contents itself with reciting the facts, without expressing an opinion on the morality of the transaction.

The chief increase in the company's capital was made after 1867. For some years previously, owning only a line from Cleveland to Columbus, where it connected with a line to Cincinnati which worked in harmony with it, it had been very prosperous. For the four years from 1864 to 1867, the average yearly dividend was 10¼ per cent. But at that time the funded debt was less than $500,000, and the capital stock $6,000,000. Nearly the whole of he net earnings thus went to the stock. And it was a time when the traffic between Cincinnati and Cleveland was important. The supply of the army during the war and the return of the army after the war made a large business, and Cincinnati was then the chief gateway across the Ohio from the South, east of Cairo. After the war new rail and river routes were opened, which diverted a large part of the traffic to lines further west, and after the war, too, began the rapid development of the West, which made the east-and-west traffic of vastly greater importance than the north-and-south traffic, which latter had been largely due to the fact that lake and canal rates from Cleveland to the seaboard were much lower than the rail rates from Cincinnati or interior points. When rail rates were greatly reduced, as they were after 1870, the lake connection ceased to be the great advantage that it had been formerly to a north-and-south road; from points near its southern terminus its disadvantage as a link in the longest line had been more than counterbalanced by the fact that it was a link in the cheapest line; but with the reduction of all rail-rates it lost gradually the advantage of cheapness while preserving the whole of its disadvantage of length. But it was before the advantage of the lake connection was greatly reduced that, in 1867, the Cleveland Company made its extension to Indianapolis and contracted with two other companies for the control of a line in their joint interest from Indianapolis to St. Louis. The extension was indispensable if the company was to share in the traffic of the part of the country which was growing rapidly. Whether the cost of it was unduly large we are unable to say. The Bellefontaine road to Indianapolis, 203 miles, was taken on terms which gave that company $4,420,000 of the present Cleveland Company's stock for its stock, and assumed its bonds to the amount of $1,540,000, equal to $21,870 of stock and $7,586 in bonds per mile. This is not a large amount, but the old line was represented by only $31,915 of stock and $2,260 of bonds per mile, and this was an old and well-established line that we see had been paying large dividends for years. More than one-fourth of the Bellefontaine stock was the property of the Cleveland Company, however, and to that extent it suffered no loss if it paid too high a price for the road. In consolidating a stock dividend of 20 per cent. was given to the Cleveland Company shareholders, to equalize values, so that thereafter 5 per cent. brought them as much as 6 per cent. had done. But this was only one part of the arrangement by which a Southwestern connection was secured. The other was the tripartite contract concerning the line from Indianapolis to St. Louis, by which it took half of the stock of the Indianapolis & St. Louis and with the two other companies guaranteed the rental of the St. Louis, Alton & Terre Haute. This contract after 1873 involved a yearly loss to the guaranteeing companies; but the fact that three companies joined in it is pretty good evidence that it was at the time thought a reasonable one to make, and the St. Louis connection has doubtless been worth what it has cost, if it could not have been obtained on easier terms.

The acquisition of the Indianapolis and the St. Louis line thus seems to have been indispensable to the Cleveland Company. But it does not follow from this that there should be an addition to the profits in proportion to the capital invested. The property as it stood would probably have very soon lost the larger part of its profits if some such connection had not been in some way secured.

The St. Louis connection had scarcely been secured when the Cleveland Company was threatened with the loss of its Cincinnati connection, for in 1869 the Little Miami road was leased to the Pan-handle, whose interest was to have all the Cincinnati traffic pass over its own road. In consequence of this the Cleveland Company procured the construction in its interest of the Cincinnati & Springfield road, by a contract which was extremely onerous, and has resulted in a great loss. Some Cincinnati connection was needed, certainly, but it is probable that one could have been secured on much easier terms.

When these connections were made the company's capital was increased nearly $12,000,000 over what it had been in 1867, and moreover it was liable for the rental of the Cincinnati and St. Louis lines, which exceeded their profits. During the five years from 1868 to 1872, the reported surplus of net earnings over interest and direct rentals was $4,287,228, and the dividends, 7 per cent. yearly, amounted to $4,030,610. But meanwhile the company had been compelled to make advances of $927,950 to the Indianapolis & St. Louis Company, and $618,076 to the Cincinnati & Springfield Company—the latter for one year only. These advances, it is true, remained debts due from the assisted companies to the Cleveland Company, but they were debts which they had no means to pay, and the payments had to be made by the Cleveland Company in connection with its contracts for the control of the companies, and were largely a price paid for that control. Such assets as these debts did not help to pay interest and dividends, and 7 per cent. could not have been paid during these years if the money had not been taken from the proceeds of new issues of shares and bonds. As the committee's report puts it:

"In plain words, it had only been possible to procure the net earnings for distribution to the shareholders by selling shares or bonds, or both, to an extent absolutely imperiling the solvency of the company, as the railway had from the beginning of this period ceased to respond with increased net earnings to its large outlays attending extensions and changes in connections."

For the 11 years since 1872, during which the road has been under its present management, the net earnings in excess of fixed charges have been $6,615,339, out of which $3,522,952 has been paid in dividends; while the advances to the Cincinnati and St. Louis connections have been $5,211,608. The construction account has been increased about $2,800,000, and the stock and debt $4,665,325. We may say, therefore, that about $1,870,000 of the advances were met by additions to the capital, which leaves $3,342,000 not so provided for, and which, evidently, was met chiefly by the $3,100,000 of undivided suplus net earnings. Were the assets represented by these advances such that they could properly or practically have been met by new issues of capital, leaving the net earnings available for division? What would the claims against the Indianapolis & St. Louis and the Cincinnati & Springfield roads have brought in the open market? If the Cleveland Company had divided all that it has reported as net earnings, how would it have paid these advances? They are certainly nominally additions to the capital of the company; in so far as they represent improvements of these roads they are actually capital; in so far as they represent deficits in interest or expenses which the Cleveland Company had guaranteed they rather represent rental—the price paid for control. If the roads of the companies owing the money were sold to pay these debts, the result would simply be to give the whole of their stock to the Cleveland Company, which already controlled one of them absolutely and owned half the stock of the Indianapolis & St. Louis; the process has been gone through with for the latter road, the whole of whose stock is now owned by the Cleveland Company. Possibly the advances which have resulted in securing this sole control may at some time enable the company to increase its profits—give it, not claims, but actual money susceptible of division. But it has not come yet. The improvements made to the property, representing actual capital expended on it, have been necessary, the committee say, to enable it to hold its traffic and prevent a decrease in net earnings. Until there is a prospect of an increase of the profits to be divided, it deprecates any addition to the shares among which they must be divided. It believes that the Cincinnati leased line will hereafter at least earn its rental, and that there will be a better result than heretofore from the working of the St. Louis connection, and says that "it is to be expected that dividends *from the net earnings* of the railway can be declared hereafter with greater certainty and regularity."

It may be true that the English policy, by which all additions to a company's property are made by new and duly authorized issues of capital, and all net earnings in excess of fixed charges are held sacredly at the disposition of the shareholders, is the best one, if enforced on all companies. But with contracts such as those of the Cleveland Company with its St. Louis and Cincinnati connections, this could hardly have increased the shareholders' dividends. The advances had to be made by the terms of the contract, and formed a charge prior to dividends. No vote of the shareholders could have prevented paying them, and if they had received anything in place of them, it could have had no more value than what their company received for them—namely, the claims against two companies which were not able to pay the interest on the debts for which their roads were mortgaged. Paper representing these claims might have been distributed among the shareholders, but probably it would have been worth nothing.

Neither does it always seem advisable to issue new securities for all expenditures which are strictly on capital account. Large expenditures of that kind are in this country necessary for what we have called defensive purposes, not to make an increase, but to prevent a decrease of profits. The stockholders should certainly insist on having a separate account of all

such expenditures, and there is much to be said in favor of giving them some kind of paper—deferred stock or something of the kind—as fast as such expenditures are made; but when earnings tend to decrease, and additions to the property must be made to save it from greater losses, issues of bonds can only be made on very hard terms, and issues of stock to the shareholders may greatly reduce the value of their former holdings.

The New York Railroad Commission on Bridges.

The New York Railroad Commission is not happy in its last report on a bridge accident given elsewhere. The report is marred by strange mathematical errors, and it is open to objection both for what it says and for what it does not say.

The most serious mathematical error is in the strain on rod 4, which the report wrongly computes at 13,100 lbs. per square inch, whereas it is in fact only 11,430 lbs., and less than on any other member except 2. The reasoning and argument as to effect of temperature and bad adjustment apparently fall to the ground with the error on which they are based, a fact the more to be regretted because the conclusions on that subject are sound, although the premises are unsound.

After correcting this error, it is impossible even to guess from the facts given where the weakest point really was. The report says "the material in the chords was abundant, *if the splices were all right*"—a very important "if," but how important it gives no means for determining, since the examination seems to have been confined to the principal members of the truss and ignored the points of especial weakness in most old bridges, the counters, floor system, and details. For one bridge that is weak in the principal members there are dozens that are defective in their minor parts, but the necessary facts to form any opinion on in this respect are conspicuous by their absence.

Nor does this cover all the errors. The report assumes in discussing the subject of expansion and proper adjustment that the removal or slackness of one of the subsidiary suspenders will double the strain in the adjacent one, whereas it would increase its strain about 12 per cent. It states that "had any two of the rods 1, 2 or 3 been loose, so as to throw triple work on the remaining rod, it would have been most likely to rupture it." Such assumptions as these are not justifiable. The removal of two of the rods would not triple the strain on the remaining one, nor quite double it. In the report the maximum strain on one rod is determined from the concentrated wheel load, but the reporters have failed to appreciate that the same concentrated wheel loads do not produce double and triple strains on double and triple panels.

The report also says that "if rod 4 was so loose as not to do its work, and the strain thereon was transmitted to rod No. 3, it would unquestionably have ruptured it." Very likely! But did the investigator not know that rod No. 4 could not be loosened without dropping the bridge into the river?

"It is more than probable that one or other of the above conditions obtained at the time of the disaster," says the report; but if these are the facts upon which the conclusions of the report are based, we prefer to accept the additional statement that "the exact cause of the downfall of this bridge is obscure." We have no other information than is given in this report to determine the probable cause of failure; but it seems strange that a train without air-brakes, and only about 200 ft. long, can cover a bridge 111 ft. long, which then breaks, and yet allows the passenger car, about 65 ft. long, to stop in less than 24 ft.

It must have been running very slowly, and perhaps the engineman (who was killed) saw something wrong ahead, with track or bridge, and was trying to stop, or perhaps the engine was derailed at or upon the bridge.

But the report is as noticeable for what it omits to say as for what it says. All of the following might well have been included in the Commissioners' report, but is not.

The bridge was too weak in the beginning, and ought never to have been accepted nor erected, though doubtless it was as strong as many others which exist and are in daily use.

The company was continuously negligent from the day of erection, in 1871, until the bridge fell, in not determining, through proper experts, whether the iron was overstrained and whether the adjustments were correct.

The Chief Engineer was personally negligent in not having done this either himself or through others more expert. "We warrant that he did no more than many a" chief "has done;" but the occasion was good, and might well have been improved, to have spoken with some emphasis of the importance of *knowing* that no single member of a bridge is not overstrained. "More frequent adjustments of the bridge" were not enough.

The prevalent system of letting bridges by contract under competitive proposals, without skilled advice, on behalf of the company, invites such disasters. Until the end of time men will "skin" their bridges under such circumstances, or be compelled to give way to those who do.

All these things the Commissioners might well have emphasized in their conclusions, but did not. It therefore excites a smile to see them picking out the one thing about the whole business for which the company was *not* blameworthy in any sense as an especial subject of censure, viz.: "Using the old iron in rebuilding the bridge;" the "rebuilding" consisting in renewing the wooden chords and posts, but *not* the iron rods. The latter were, according to the report itself, still in good condition and uninjured.

It may be assumed that this is merely a maladroit and careless wording, for the Commission can hardly mean to assert that iron which has been in use for 12 years is not fit for further service from the mere fact of such use. At least, experts generally still believe that iron is not injured until it has been sufficiently overstrained to lose its ductile qualities; and this seems reasonable to railroad men in general, who do not throw away their rails when they renew the ties, nor their boilers whenever the lagging gives out.

Nevertheless, if the accident and the report lead any railroad managers to make sure that they have no bridges in their charge which have been getting ready to fall down ever since they were built, it will do much good.

The Victims of Car Coupling.

We give a good deal of space this week to a letter from Mr. John M. Goodwin on the subject of freight car-couplers, proposing a plan to compel a change from the present murderous method. We do not believe that the plan he proposes could be executed, or that it would be likely to be successful if carried out; but the facts that he presents deserve attention and demand action by the powers which can best discover and apply the remedy—the railroad companies themselves. We cannot vouch for Mr. Goodwin's statistics of the numbers killed and injured in coupling cars; but there can be no doubt whatever that the numbers are enormous, probably exceeding the whole number of passengers and employés killed and wounded by *train* accidents to prevent which, rightfully, great pains are taken and expenditures incurred. It would be a great battle whose victims were as numerous as those who are crushed yearly while coupling cars. It probably happens that in a majority of cases the victim is himself at fault. But experience shows that the fault, if fault it is, is one which an enormously large number of men are apt to commit; and it is just as important to prevent their suffering for such a fault as it is to provide banisters to a staircase, which yet is so wide that except by his own fault none need fall off.

Notwithstanding the great number of automatic couplers invented, probably most railroad men to-day are not convinced that there is one that meets the requirements. Even if they were, they would hesitate to adopt one which might not couple with the cars of their connections. Thus to the necessity of finding an efficient apparatus by which cars may be coupled without going between them there is added the further necessity of uniform and simultaneous action by the railroad companies concerning a matter not well understood and regarding which opinions at present are likely to be very diverse. This latter difficulty—the difficulty of securing the united action of a number of independent organizations like railroad companies—is an enormous one, which few adequately appreciate. If there was a central organization to which all our railroads belonged, like the German Railroad Union in Central Europe, the difficulty would be very much less; but we have nothing of the kind, or only the germ of one, in the Master Car-Builders' Association.

But the crushing and mangling of men by the thousands calls for some effort at least to prevent it even if the way is not quite clear and action will be difficult. It justifies extraordinary methods, efforts and expenditures. If it is true, as it probably is, that the railroad companies do not generally know of apparatus that will prevent the coupling slaughters, they should lose no time in finding out, in testing whatever has any promise with such thoroughness and completeness that they will all thereafter know what can and what cannot be done by the appliances offered for their use. The plan proposed by Mr. Forney at the April meeting of the Car-Builders' Club seems to promise the best results. If the railroads should employ capable and trustworthy experts to test thoroughly the various couplers, and, if need be, make modifications or combinations of them, or design something that would fill the requirements, it is probable that something would be found; but if nothing was found the experiments would probably establish pretty clearly what the requirements are which a car-coupler should fulfill, and what are the defects of the best of those now offered. Moreover, the railroad companies would have cleared their skirts, and they are by no means clear now. In fact, it will be shameful if they do not make some serious effort, which can hardly be called serious unless it is a combined effort, to shorten this terribly long list of the dead and wounded victims of their imperfect methods and apparatus. If they had had to pay for the killed and maimed brakemen as they do for killed and maimed passengers they would have been terribly exercised about the matter long ago; for the stockholder, not coming in contact with the victims, feels such things only in his pocket; and the pressure of the stockholder to save money *plus* the humanity of the operating officer are certainly more effective than the humanity alone. But even a modification of the employers' liability law which would give the employé substantially the same rights as the passenger might not greatly help in this matter; for, as we have said, the sufferers in car-coupling are largely guilty of "contributory negligence," which would exonerate the company, even if a passenger were a victim. This kind of contributory negligence, though a good reason why the victim should not receive damages, is not always a good reason why the employer should not pay them.

This matter should not be allowed to rest, but its agitation by the inventors of car-couplers alone is hardly likely to be fruitful. The railroad men should take it up, and they should need no other incitement than the regiments of men their cars have crippled and the companies of them they have killed. But it is not impossible, as has been suggested, that if they do not take up the question and solve it rationally, it may be taken up for them, by state legislatures, and solved irrationally—or much trouble and confusion caused in a vain attempt to solve it. We are ashamed, almost, to give this as a reason for action in the face of the all-sufficient one. Let each superintendent sum up all the casual ties of the kind under his jurisdiction, and then imagine the ghastly heap of crushed fingers, hands and arms they would make, with an occasional body—they would make a large as well as a ghastly heap for most superintendents of long service on a long and busy line; let him imagine this, and keep the picture before his mind, and he will certainly be willing to do what in him lies to prevent the heap from growing.

New York Grain Receipts by Different Routes.

The deliveries of grain at New York this year have been distributed very different among by the several roads from what they were last year, the New York Central gaining (in percentage) considerably, the Erie losing largely, and the Pennsylvania considerably. The Lackawanna did not fairly begin to carry grain until after January last year, and its proportion for the three months was one-half greater this year than last. The West Shore is but just beginning to be felt, and has not yet attained to the dignity of a separate report in the Produce Exchange statistics; but the increase over last year in the receipts by "various" railroads shows that it has made a beginning and it probably carried two-thirds as much as the Lackawanna. The receipts and the percentage of the total receipts by each route this year and last were (including flour reduced to bushels):

	Bushels.		P. c. of total.	
	1884.	1883.	1884.	1883.
N. Y. Cen	8,808,275	12,402,708	53.0	47.1
Erie	3,213,781	7,871,661	19.3	29.9
Penna	1,741,873	3,673,774	10.5	14.0
D., L. & W.	1,180,419	1,270,894	7.1	4.8
Various	947,841	239,755	5.7	0.9
Total rail	15,892,189	25,458,752	95.6	96.7
Coastwise	738,390	877,160	4.4	3.3
Total	16,630,579	26,335,912	100.00	100.00

The total receipts have fallen off 9,700,000 bushels (35.4 per cent.), and there has been a decrease by all routes named except the "various" unspecified railroads. Doubtless the whole of the increase by these, and very likely something more, is due to the West Shore, which began to carry this year. The three old roads we see delivered 82.8 per cent. of the whole this year, against 91 per cent. last year; but the New York Central gained in percentage this year, and the other two roads, and the Erie especially, as we said before, lost very largely. The *amount* of loss by each road was:

The total loss was	35½	per cent.	=	9,705,333	bushels.
The Erie lost	59	" "	=	4,657,880	"
The Central lost	29	" "	=	3,504,433	"
The Pennsylvania lost	52½	" "	=	1,931,861	"
The Lackawanna "	7	" "	=	90,475	"
The vessels "	16	" "	=	138,770	"
Total				10,413,419	bushels.
And the "various" roads gained				708,086	"

The New York Central's percentages have not varied

greatly from month to month this year; the Erie's was smallest in February (16¼ per cent.), and so was the Pennsylvania's, while the percentage of the Lackawanna and of the other roads was largest in February and the Lackawanna's was smallest in March. As it and the West Shore both receive from the Grand Trunk, it is probable that what the West Shore gets comes more from the Lackawanna than from the older roads. The aggregate receipts were larger in March, but only about 5 per cent. larger then than in January. They are so very small this year that the percentages are much less important than usual, and now the low rates make them still less important to the roads carrying them. Thus the receipts by each of the three leading roads and the total receipts for these three months for four years have been:

	1884.	1883.	1882.	1881.
Total.....	16,630.579	26,335,912	17,646,949	21,977,938
N. Y. Cen ...	8 808.275	12,402,708	9,653,797	8.277.904
Erie.....	3,213.781	7,871,661	5,442.444	6,927.589
Penna	1.741,873	3 673,734	1,865,861	4,992,273

All carried less this year than in any other of the four, except the New York Central, which had a little more than in 1881, which was the year when great diversions of traffic from it resulted later in the great railroad war. While the decrease in the total since 1881 (which was a year of heavy grain movement, though reduced somewhat in this quarter by the terrible winter) is 24 per cent., the Pennsylvania's decrease is 65 per cent. and the Erie's 53½ per cent.

The two new roads apparently have taken about 12 per cent. of the New York receipts this year, which is certainly as little as could be expected of them. They will, in all probability, take a larger proportion hereafter, if the rates become at all profitable. They have been allotted 22.6 per cent. of the shipments *from* New York, and it is generally esteemed more difficult to divert merchandise shipments than coarse freights from established routes. But the new lines have their termini in New York, and are able to help themselves to west-bound traffic, while for east-bound they are dependent on other railroads which have other connections with New York. When navigation opens they can control steamers to the upper lake ports, which will work for them exclusively, and they may be able greatly to increase their share of the grain in this way; but they will not be likely to try very hard to do this while rates are as low as they are now.

By the provisions of the Thurman bill the Union and Central Pacific railroads are required to pay 25 per cent. of their net earnings into a sinking fund to retire the interest and principal of the government bonds issued to assist in their construction. The House Committee on Pacific Railroads has now reported a bill to increase this payment from 25 to 35 per cent., and to require it on the net earnings of all the lines worked by the company, and not of those subsidized only. Now the Union Pacific works 4,700 miles of road, of which only 1,432 miles were subsidized; and of the 2.876 miles worked by the Central Pacific, only 855 miles were subsidized. By the original contract, the government's lien was restricted to the lines subsidized, the companies were not required to build any more road, and nothing that Congress can do probably can prevent their selling and giving a complete title to all the road which is not subsidized. The only justification that can be pleaded for *including* the earnings of the unsubsidized lines, many of which are not owned by the debtor companies at all, is that within 14 years these companies will have an immense debt to pay, and that the government should meanwhile take possession of any money that they get into their hands from any source. But if the law should pass and be enforced probably one of the results would be that the lease of the Southern Pacific (with its 1,526 miles of road) to the Central Pacific, which expires at the end of this year, will not be renewed.

The payments by the Union Pacific under the present law were $1,869,958 from the business of 1883; by the proposed law they would have been $3,065,458. and the additional $1,200,000 would be about 2 per cent. on the stock. The Central Pacific had to pay under the present law $792,920; by the proposed law the amount would have been $3,002,350, and the $2,200,000 of difference is about $3.70 per share of the company's stock. Thus the increase in the payments required is something enormous, especially in the case of the Central Pacific, which gets only about one-third of its net earnings from its subsidized line, while most of the Union Pacific's great mileage of branches yield very small net earnings and are useful to it only by increasing the net earnings of its main line. In this way both companies, but especially the Union Pacific, have enormously increased the value of the security for the government loan.

Under the decisions of the Supreme Court it appears that Congress may use its discretion freely in fixing the contributions to the sinking funds required of these companies; and it may be said that if it is illegal to require anything from the company's unsubsidized lines it need not matter, for the percentage of the subsidized lines' net earnings required might be increased until it would equal 35 per cent. of the total net earnings. But if the Thurman bill passed in 1878 was a fair settlement of the matter, it does not appear why the requirements should be increased. The net earnings of the Union Pacific at least have increased largely since that time, and the road which secures the government advances has been made very much more valuable by what the company has done. There probably is a somewhat general feeling that these roads should be squeezed pretty hard, because the contract which the government made with their projectors was very profitable to the latter. But if our agents made a bad bargain with the agents of the Pacific railroad companies, that gives us no rights against those companies which we would not have had if the government, instead of the companies, had got the best end of the bargain. Doubtless, the companies' agents did their utmost to make the contract as favorable as possible for their employers. If they outwitted our agents in Congress we should not blame or punish the companies but our own incompetent or neglectful or dishonest agents, or ourselves for sending such men to Congress. It somehow seems to be thought that when a corporation makes a bargain with the government which is unfavorable to the latter, the people have a right to hold the corporation responsible.

Some figures are published concerning the business of the Colorado Traffic Association, which give a more accurate idea of the value of that traffic than has heretofore been attainable by most of us. The gross earnings from this traffic by the three roads for twelve months, being the eight months from Nov. 1 to June 30, 1883, and the four months from Aug. 1 to Nov. 30, are given as follows:

	Earnings.	P. c. of total
Union Pacific.....	$2,472,141	43.7
Chicago, Burlington & Quincy.....	1,576,657	27.9
Atchison, Topeka & Santa Fe.....	1,602,858	28.4
Total.....	$5,651,656	100.0

This division of earnings is said to be nearly in the proportions awarded under the pool, which are not the same for the whole Colorado business, but are reported as follows:

Traffic of—	U. P.	B. & Q.	A. T. & S. F.
Denver.....	51	30	19
Pueblo...	25	25	50
Other Colorado points.....	40	25	35

In total earnings the Union Pacific was 1.05 per cent. short, the Burlington 0.35 short, and the Atchison 1.40 over. It appears from this that the average monthly earnings of all the roads from Colorado business were $471,000. The average aggregate earnings per month of these three roads in 1883 were $5,832,400, so that the Colorado traffic yielded them 8 per cent. of their earnings—certainly as much as could be expected, considering the great extent of their lines. In 1883 the total Union Pacific earnings from through and Pacific freight were $6,979,500 or $581,600 per month, and from through freight other than Pacific freight they were but $372,250 per month. This through freight includes Utah, Idaho and Montana, as well as Colorado freight. As its earnings from Colorado traffic were $206,012 per month, it is evident that the Colorado business is much the most important.

There will be meetings in New York next week of representatives of the roads carrying through freight eastward from St. Louis, Peoria and Indianapolis, to organize or reorganize pools for these places, and not till this is done is there likely to be any movement toward advancing eastbound rates. Some of the newspapers talk as if the "pool" had gone to pieces, and it were necessary to do something to set it in order again. But nothing of the kind has happened. Pools, where there are any, are working just as usual. That there was a very general irregularity in rates previous to the March reductions is certainly true, and that these reductions make the rates unprofitably low is also true; but the reductions were made regularly as provided by the agreement and as it was intended they should be made under such circumstances. The railroads are now taking the punishment for their crimes as provided by law. The punishment is as painful to bear as if inflicted by the private vengeance of a railroad war, perhaps, but it is not to be regretted in the same way by the railroad community; any more than a hanging by law is to regretted like a hanging by a mob. The punishment is expected to be a deterrent. No new agreements are required to enable the associated roads to advance rates if they think best. They think it not best until the safeguard of pooling is provided at the two places where trouble has arisen most frequently heretofore.

Under the title of "Traffic Unity" Mr. G. R. Blanchard, Vice-President of the New York, Lake Erie & Western Company, has presented at considerable length a statement of reasons why the co-operation of the railroads to maintain rates, and their action in dividing traffic, earnings or profits for this purpose, are not harmful but are in many respects advantageous to the public. This argument (first published in the Chicago *Railway Review* and now in a pamphlet of 34 pages) was probably called out by the proposal in Congress to pass a law prohibiting the pooling agreements which have become so common and extensive of late years. It seems strange that in a measure which no one would pretend to justify, if competition among railroads worked equitably—a measure intended largely to cure evils, actual or supposed, caused by the unregulated competition of the railroads—a clause should be inserted requiring and intended to require the railroads to practice the very unregulated competition the results of which are deplored. But the railroad combinations have now lasted long enough and have been effective for periods long enough to enable us to judge of their effects by their working. If they enable the railroads to make extortionate charges, or if, under them, unjust discriminations are commoner than without them, the facts should show it. We have not seen the arguments of the business men who advocated the prohibition of pooling; but it does not seem possible that one of them (unless he were one who had had secret rebates under the old regime) could deliberately say, after reviewing rates and practices both before and after pooling began, that the old way was better and fairer for the public and fair for the railroads. If there are evils now, he would have to confess that they were all worse then—greater irregularity, and more frequent changes in rates, and vastly more discriminations between shippers and places. The fact is that those who object to pooling in the abstract do it not for what the pooled roads *have* done, but for what they imagine they have the power to do and fear they may do. But we no longer need imagine the effects of pools, for we can see them. We do not believe that in their history there is any example of an extortionate rate, and certainly there is none of rates as high as they were sometimes before the days of pools; and as for discriminations between persons and places, they have ceased utterly when the railroads kept their agreements and have been in fact very much less frequent than formerly. It is true that the whole problem of the relations of the railroads to the community will not be solved by them, and they will not prevent extortion where otherwise it might be possible. But may I not take quinine for my fever because it will not cure my lameness also? Should the contracts of the railroads be extended so as to create true "traffic unity," and cover a large part of the local as well as the through business (which latter alone is now pooled, except in a few cases), it may be desirable that some public tribunal, judicial in its character, should pass upon the reasonableness of the rates established by the great railroad co-operative union; but for through freight this is not needed, and as the desirable ends of steadiness, regularity and perfectly uniform rates for all can only be secured by some kind of simultaneous action of the railroads, mutually agreed to by them or else imposed upon them by some authority over them all, the way to guard against a possible evil would not be by prohibiting the co-operation, with all its good effects, but to set up something to prevent the evil that is feared.

Readers will find in Mr. Blanchard's pamphlet a very full statement of the good effected by combinations, fortified by some important statements of facts not previously published.

The low rates do not yet make large seaboard receipts, though for three weeks they have made large shipments from the Northwestern markets. For five successive weeks these Northwestern shipments have been, in bushels:

Week ending				
March 15.	March 22.	March 29.	April 5.	April 12.
3,359,514	3,339,566	4.176,111	4,344,131	4.495,594

For the same weeks the receipts at Atlantic ports have been:

2,047,942	2,606,217	2,823.541	2,887,282	2,360,033

We should expect shipments billed to the seaboard to arrive about a week after the time of shipment from Chicago, and if so, the Atlantic receipts of the week to March 29 should include such Northwestern shipments as

were billed to the seaboard the previous week. But when the Northwestern shipments increased the next week 836,000 bushels the Atlantic receipts of the week of their arrival increased but 64,000 bushels; and when a week later the Northwestern shipments increased 158,000 bushels more, the Atlantic receipts *decreased* 527,000 bushels. In two weeks the increase of Northwestern receipts was 1,004.000 bushels, while there was a *decrease* of 46,000 bushels in Atlantic receipts.

It does not follow that there has been no increase in the shipments to the seaboard *from the great Northwestern markets;* probably there was, but there was probably a decrease in the shipments from the farmers' stations east of the reporting markets—east of St. Louis and Peoria and south of the lakes—due partly to the lower prices and partly to the absorption of the farmers in their spring work. That the receipts from this source have fallen off is indicated by the fact that the receipts of the Northwestern markets have fallen off greatly since rates were reduced (though of course not *because* rates were reduced), having been for five successive weeks:

Week ending.				
March 15.	March 22.	March 29.	April 5.	April 12.
4,902,106	4,486,653	4,171,067	3,318,127	2,642,254

Now the same influences that have reduced the receipts of the Northwestern markets have tended to reduce the receipts of the Atlantic ports *from interior stations.* So while there may have been a great increase in the consignments to the seaboard from the stocks in elevators, there has been an actual decrease in the total receipts.

There was, however, in the week ending April 12 a large increase in the *exports* of grain, which had not been manifested before since prices fell, nearly three weeks previously. For eight weeks to April 5 the exports had fluctuated from 1,151,000 to 1,562,000 bushels; but in the week to April 12 they were 1,925,000, and more than in any other week of the year save one. No less than 1,272,501 bushels of these exports were wheat, the price of which has fallen seriously. For five successive weeks the wheat exports have been:

March 15.	March 22.	March 29.	Apr. 5.	Apr. 12.
524,704	347,071	607,947	503,388	1,272,501

The impulse given by the lower prices seems to have been very slow in coming, but it finally came very decidedly.

There is an over supply of ocean steamers again, as there was after 1874, and many of the leading British steamship companies have been compelled to pass their dividends. It has been with steamships as with railroads in many parts of this country. After 1878 business became very profitable. The whole world seemed simultaneously to increase its production and interchanges. The carriers' profits were so large that a great addition was made to the stock of ocean steamers, which has continued until this year. Compared with railroads, a small capital serves to increase immensely the steamship tonnage, and hardly have the exceptionally large profits ceased when there are more steamers than traffic, and their competition makes rates so low that there is little or no profit on what traffic there is.

Anthracite coal production last year was the largest on record, amounting to 31,793,027 tons, an increase of 2,672,951 tons, or 9.2 per cent. over 1882. This increase was very evenly distributed, as is shown by the following table, which gives the percentage of the total product consumed in or shipped to the districts named:

	1883. Per cent.	1882. Per cent.
Pennsylvania, New York and New Jersey	68.6	68.5
New England states	16.9	17.4
Southern states, including Delaware, Maryland and the District of Columbia	4.0	4.0
Western states	8.0	7.6
Pacific coast	0.1	0.2
Dominion of Canada	2.3	2.1
Foreign countries	0.1	0.2
Total	100.0	100.0

It will be seen that of the entire output 89.5 per cent. was consumed in the states along the Atlantic coast, very nearly all of it north of the Potomac; for of the shipments reported to the Southern states only a small part goes beyond Baltimore and Washington. The shipments to the Pacific coast and to foreign ports are too small to be taken into consideration, amounting to hardly one day's output when the collieries are in full work, while those to Canada make only an inconsiderable proportion of the total.

The shipments to the Western states show an increase proportionally somewhat greater than that of the total output. Last year they were 2,537,174 tons, against 2,213,107 in 1882, an increase of 324,067 tons, or 14.6 per cent. The gain in this Western trade was, however, much less than might have been expected from the preparations made for it a year or two ago, and its total amount is less than might be supposed from what has been said in some quarters of its importance. Anthracite is the fuel of luxury there, somewhat as English cannel coal is here; at least it is so at any considerable distance from the lake ports, where it often costs two, three or four times as much as the domestic bituminous coal, which is a dirty fuel, much more so than Pittsburgh or Ohio coal.

March Accidents.

Our record of train accidents in March, given in full elsewhere, makes mention of 39 collisions, in which 11 persons were killed and 48 injured; 72 derailments, in which 15 were killed and 63 hurt, and 4 other accidents, in which one person was injured—a total of 115 accidents, in which 26 persons were killed and 112 hurt.

As compared with March, 1883, there was a decrease of 27 accidents, an increase of 13 killed, and a decrease of 25 injured.

These accidents are classed as to their nature and causes as follows:

COLLISIONS:	
Rear	23
Butting	15
Crossing	1
	—39
DERAILMENTS:	
Broken rail	10
Broken frog	1
Broken switch-rod	1
Broken bridge	4
Spreading of rails	8
Broken wheel	8
Broken axle	2
Broken truck	1
Accidental obstruction	3
Wash-out	5
Land-slide	5
Snow	2
Wind	1
Runaway cars	2
Misplaced switch	5
Bridge purposely burned	1
Unexplained	13
	—72
OTHER ACCIDENTS:	
Boiler explosion	1
Dynamite explosion	1
Broken coupling-rod	1
Broken wheel not causing derailment	1
	— 4
Total	115

Six collisions were caused by mistakes in orders or failure to understand or obey them; two by trains breaking in two; two by runaway engines; one each by fog and by failure to use signals promptly or properly.

A general classification of these accidents is as follows:

	Collisions.	Derailments.	Other.	Total.
Defects of road	..	24	..	24
Defects of equipment	2	13	3	18
Negligence in operating	36	5	..	41
Unforeseen obstructions	1	16	1	18
Maliciously caused	..	1	..	1
Unexplained	..	13	..	13
Total	39	72	4	115

This division presents accidents of management as constituting 36 per cent. of the entire number. Some of those resulting from unforseen obstructions might possibly be charged to defective management in so far as they may have resulted from failure to keep up strict watch over the line when breaks in the road may be expected.

A division according to classes of trains and accidents is as follows:

Accidents:	Collisions.	Derailments.	Other.	Total.
To passenger trains	3	26	2	31
To a pass. and a freight	6	..	..	6
To freight trains	30	46	2	78
Total	39	72	4	115

This shows accidents to a total of 154 trains, of which 40, or 26 per cent., were passenger trains, and 114, or 74 per per cent., were freight trains. This is nearer the true proportion than the necessarily imperfect record usually presents them.

Of the total number of accidents 71 are reported as having happened in the daytime and 44 at night.

The persons killed and injured were as follows:

	Killed.			Injured.		
	Employés.	Others.	Total.	Employés.	Others.	Total.
In collisions	11	...	11	30	18	48
In derailments	15	...	15	30	33	63
In other accidents	..	...	..	1	..	1
Total	26	...	26	61	51	112

All of the killed were employés, and it is worthy of note that not a single passenger is reported as killed during the month. Employés were 54 per cent. of the injured and 77 per cent. of the whole number of casualties.

Of the 138 persons killed or injured 59 were in collisions, 78 in derailments and one in the other accidents. Deaths were caused by 7 collisions and 11 derailments; injuries by 9 collisions, 19 derailments and one other accident. In all 18 accidents caused death and 29 lesser injuries, leaving 65, or 57 per cent. of the whole number, in which no serious injury to persons is recorded.

March was an unfavorable month, winter weather continuing well into the month. The number of wash outs and land-slides shows the destructive effect of its many storms, and the large number of broken rails the continuing results of the severe winter.

The number of collisions was smaller than is usually the case, being but little over one-third of the whole number of accidents. Butting collisions formed an unusually large proportion.

There was but a small number of misplaced switches, only five derailments and no collisions from this cause being recorded, the smallest number for many months.

There was one malicious derailment, which was caused by tramps burning a small wooden bridge. This is, we believe, a new device of the train-wrecker, and one which, it is to be hoped, will not be copied by others.

A singular accident was the wrecking of the tender of a construction train by the explosion of dynamite cartridges which were carelessly placed upon it for transportation. This is a new form of accident here, although it is not extraordinary, considering the manner in which explosives are too often handled.

For the year ending with March the record is as follows:

	Accidents.	Killed.	Injured.
April	106	26	114
May	120	28	77
June	91	38	95
July	119	57	204
August	144	42	136
September	158	44	183
October	174	43	234
November	122	34	235
December	112	32	113
January	147	56	240
February	110	22	150
March	115	26	112
Total	1,518	448	1,893
Total, same months, 1882-83	1,534	416	1,742
" " " 1881-82	1,497	412	1,353
" " " 1880-81	1,372	374	1,652

The yearly average for the four years is 1,430 accidents, 413 killed and 1,660 injured, which is below the totals for last year in all respects.

The averages per month for the year were 127 accidents, 37 killed and 168 injured, so that March was below the average in all respects.

The averages per day for March were 3.71 accidents, 0.84 killed and 3.61 injured; for the year they were 4.15 accidents, 1.22 killed and 5.17 injured.

The average casualties per accidents were, for the month, 0.226 killed and 0.974 injured; for the year, 0.295 killed and 1.247 injured, showing for the month lower averages than for the year.

In connection with Mr. Horatio Allen's paper on "The First Five Years of the Railroad Era" we published two weeks ago a portrait of the author. Mr. Allen wishes to have it understood that he had nothing to do with the publication of the portrait. He desired to put on record a portion of American railroad history in which he took a part, and therefore prepared the paper, and we published the portrait without consulting him, knowing that many would desire to see the lineaments of one of the railroad pioneers, and would take special interest in it when reading his account of the first locomotive journey in America.

The paper on the "Rate of Breakage of Chilled Cast-iron Car Wheels on the Pennsylvania Railroad," which appeared in our columns last week as a letter to the *Railroad Gazette* and without a signature, was the paper submitted to the last meeting of the Car-Builders' Club by Mr. J. S. Whitney, of Philadelphia.

The through and local shipments of flour, grain and provisions from Chicago for the week ending April 19, by the incomplete report of the Board of Trade, were 82,907 tons, against 28,474 in the corresponding week of last year, and 97,653 tons in the previous week of this year. There was thus a decrease of 14,746 tons (15 per cent.) from the previous week, still leaving the shipments among the largest ever made. Of the shipments last week 11,845 tons were flour, 65,944 grain and 5,118 provisions. The percentages shipped by the several routes were in this and the previous week:

	Week to Apr. 19.	Week to Apr. 12.		Week to Apr. 19.	Week to Apr. 12.
C. & Grand T.	13.8	10 0	Ft. Wayne	13 7	18.9
Mich. Cen.	9.6	9.3	C., St. L. & Pitts.	13.7	13.0
Lake Shore	13.0	10 2	Ba t. & Ohio	11.2	12 5
Nickel Plate	15.2	11.4	Chic. & Atlantic.	9.8	14.7

Again we note the large proportion carried by some of the newer roads, the Nickel Plate taking more than any other last week and the Chicago & Grand Trunk coming next to it; while the Michigan Central, which formerly led, stands at the foot of the list, and the Fort Wayne, which is at this time probably allotted the largest share, carried very little more than the average. The large proportion going by the Baltimore & Ohio is especially notable, because that road usually carries comparatively little to interior points, so that its proportion of the through shipments (which alone are pooled) may be considerably greater than the 11.2 per cent. given above for the total, and this at a time when exports are small. The Chicago & Grand Trunk's proportion of the through traffic was probably also considerably greater than the 13.8 per cent. shown above, but since the transfer of the National Despatch to that road it will possibly be able to command more freight than any other Chicago road except the Fort Wayne—which will be a wonderful thing for a railroad but four years old to do. The three Vanderbilt roads last week carried 37.8 per cent. of the whole, against 30.9 for the week before, and the two Pennsylvania roads 27.4, against 31.9 the week before.

The provision exports from the United States in March, including beef, tallow, hog products and dairy products, were of the value of $5,610,905 this year, against $10,434,325 last year, the decrease being 46 per cent. There was besides a decrease of 36½ per cent. in the value of the cattle exported. The decrease was chiefly in hog products, of which the exports were just about half as great as last year—32¾ millions of pounds, against 65¼ millions. The decrease in value has been even greater—52½ per cent. This is a larger decrease even than in the previous months of this year.

For the three months ending with March there was a

large increase in the cattle, tallow and cheese exports, and a slight one in the fresh-beef exports, but a large decrease in the exports of salt beef and butter, while the exports of hog products were the smallest for many years. These exports of hog products for the first quarter of the year for eight successive years have been in *millions* of pounds:

1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
219½	396	380	330	414½	244	218½	143½

The decrease from last year is 35 per cent., and last year the exports were the smallest for seven years. This is a very serious change, but it is not due, as to some extent the decrease in wheat exports is, to an accumulation of stocks in this country. We have had light crops of corn for three years and consequently a smaller stock of hogs, and we have less provisions to spare.

The Illinois Department of Agriculture reports the acreage and condition of winter wheat in that state for the first of April. The average it gives as 2,752,750 acres, which it says is 7 per cent. less than the acreage *harvested* last year, when an enormous area that had been winter-killed was plowed up in the spring. But an examination of the report made by the United States Statistician shows that he found but 2,215,000 acres of wheat harvested in Illinois in 1883—no less than 19¼ per cent. less than the State Department reports. We heretofore have found enormous discrepancies between the state and national reports. The State Department reports acreage and condition in each of the 102 counties of the state, grouped in threeg rand divisions, northern, central and third. An examination of the tables shows that what is given as the average condition of the crop for each grand division is not the average at all, but the average of the *averages* in each county—the sum of the avera ges in the different counties divided by the number of counties. By this method if in St. Clair County, which this year has 146,795 acres of winter wheat, the average condition should be 105, and in Franklin County, which has but 4,040 acres, the condition should be 30, the *average condition of the two counties* would be 105 + 30 ÷ 2 = 67.5, while actually it would be (146,795 × 1.05) + (4,040) 0.30 ÷ (146,795 + 4,040) = 101.4, and the "average" as reported by the Illinois "statisticians" would represent the condition and prospects as *one-third* [worse than they actually were. In the report just made the average condition for the northern division reported by the Department is equivalent to a decrease of 5,515 acres; but the actual average condition is equivalent to a decrease of 6,573 acres. In the southern division the average condition reported (68 per cent. of a good condition) is equivalent to a decrease of 467,746 acres, while the actual condition (71¼ per cent.) is equivalent to a decrease of only 420,297 acres. Now if the acreage was calculated in the same way—that is, if the Department added the percentage of last year's acreage in the several counties and divided the sum in the several counties to find the percentage from the whole state—no one can tell how much the latter is misrepresented. It can only be right by accident. Such statistical work would disgrace a schoolboy, but we do not feel sure that is any worse than that done in some other states.

One thing is presented with tolerable clearness in the Illinois winter wheat statistics, and that is the entire insignificance of this crop in the northern third of the state. In the north, central, and southern thirds of the state it reports the following acreages:

	Acres. Total.	Av. per county.
Northern division (32 cos.).....	55,152	1,671
Central division (35 cos.)	1,235,893	35,311
Southern division (34 cos.).....	1,461,705	42,991

More spring than winter wheat is now grown in the Northern Illinois, yet only little of that.

The Chicago lumber traffic has been larger this year than last.

From Jan. 1 to April 1 the decrease in the stock on hand for three years has been, and the receipts in M or ft.:

	1884.	1883.	1882.
Decrease in stocks,.....	264,887	243,006	281,093
Receipts.....	56,377	31,155	.....
Sales.....	321,264	274,161	.....

Thus the consumption appears to have been 17 per cent. more this year than last. Very nearly the whole of this increase was in the month of February, however, when the railroads were indulging in cut rates to the Missouri River and beyond, and the lumber men were taking advantage of them to stock up their yards in Kansas and Nebraska. The sales and shipments in February amounted to 106,714 M this year, against 54,161 last year and 92,772 in 1882. But in March the decrease in stocks was 106,052 M this year against 134,404 last and 99,234 in 1882.

A very large increase in Union Pacific land sales is said to be due to purchases by the ranch men, who heretofore have usually bought land only on the water courses and grazed the railroad and government lands without buying or paying rent. Only a small price is paid for such lands, as it takes a large area to keep a small herd; but, as this and other companies have many millions of acres of these lands, a small price will bring them a large amount of money, which is almost unexpected, because heretofore it has seemed almost impossible to sell these lands on any terms.

An official connected with the Michigan Central Railroad is reported to have said that the movement of emigrants (chiefly Americans) to the West over this road has been as great this year as last, but differently directed. Last year nine-tenths of the people were going to Dakota to look for homes; this year not more than a third. A large number go further West over the Northern Pacific, many to Oregon and Washington and some to Montana. The movement is moderate to Kansas and Nebraska, but considerable to Texas.

The Philadelphia, Wilmington & Baltimore Railroad is constructing three sets of track-tanks at its Wilmington shops. The tanks are to be laid down between Philadelphia and Washington, three on the north-bound and three on the south-bound track. Each tank is 1,000 ft. long. A tender of the latest Pennsylvania Railroad pattern has been just completed at their works. It is fitted with the scoop and holds 2,400 gallons. The use of the track-tanks will, however, enable this comparatively small tender to supply all the water needed on the run between Philadelphia and Washington. This distance can then be traversed without an intermediate stop, if such a long run is thought desirable.

The Engineer's Club of Philadelphia has conceived a new and very good idea, if properly carried out, called the club "Reference-Book," intended to contain rules, formulae, notes, records and other data such as usually accumulate in the personal note-books of engineers, and are often unlikely to be published elsewhere. It is to be printed in good-sized type with wide margin on writing paper, so as to facilitate additional marginal notes, and issued to members in separate sheets and slips, the matter being preserved in electrotype, so that it may be rearranged and reissued as often as necessary. Members (and, we presume, all others) are earnestly requested to send contributions.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Atchison, Topeka & Santa Fe.—The *Lake Valley Branch* is completed from Nutt, N. M., northwest to Lake Valley, 13 miles.

Cape Fear & Yadkin Valley.—Extended from Buffalo Creek, N. C., northwest to Greensboro, 5 miles.

Chester & Lenoir.—Extended northwest to Icard Road, N. C., 9 miles. Gauge, 3 ft.

Columbus, Hope & Greensburg.—Extended from Hope, Ind., west by south to Columbus, 11 miles.

Louisville, New Orleans & Texas.—On the southern end track is laid to a point forty-two miles northward from Baton Rouge, La., an extension of 23 miles.

Pennsylvania.—The *Susquehanna & Clearfield Branch* is completed from Keating, Pa., southwest to Karthaus, 22 miles.

This is a total of 83 miles of new railroad, making 543 miles reported to date for 1884. The total track reported laid to the corresponding date for 12 years is as follows:

	Miles.		Miles.
1884.....	543	1878...	267
1883.....	973	1877.....	269
1882.....	1,876	1876.....	399
1881.....	906	1875.....	208
1880.....	1,096	1874.....	347
1879.....	391	1873.....	598

These statements include *main track only*, no account being taken of second tracks or other additional tracks or sidings.

The Wilmington Car Shops.

The Harlan & Hollingsworth Company is not very busy just now on home orders, but is building several passenger and freight cars for Brazil and the Argentine Republic, and has just shipped one first-class and one private car for the latter destination. Eight passenger cars are building for the Canto Gallo line, a railroad which runs from Rio Janeiro to the interior, and rejoices in the possession of some long grades of 440 ft. to the mile. The gauge is somewhat peculiar, 1.10 metres or 3 ft. 7⅝ in., and the cars are hardly as roomy as is possible on the standard gauge. The wash room and saloon are in the centre of the car instead of at the ends, the lavatory being on one side of the central passage, and the saloon on the other. The seats face one another, and the backs are not reversible, and are considerably higher than usual. The seats are 5 ft. apart centre to centre of backs, which is a somewhat narrow dimension in which to confine a person so unfortunate as to measure 72 in. in a longitudinal direction. The seat and backs are covered with cane work, as is very usual in hot climates.

The absence of trussing in the body permits the window sashes being made to fall, rubber pads being provided to cushion the shock and prevent the glass or frame being broken. The clear-story windows have pivoted sashes, and the side windows and end doors have falling blinds. The first-class cars are finished inside with cherry, and the second-class with ash, the external finish in both classes being of mahogany brought up to a smooth surface, and covered with three coats of varnish.

The cars are ingeniously devised to take apart into comparatively small sections. Only those who have been in charge of a railroad abroad can appreciate the difficulties of landing the unwieldy packages in which the whole side of a car is sometimes shipped. The whole affair is so weak that if slung in the middle in hoisting it out of the ship it is seriously strained, especially in the tenons, and the chances are that it is so scratched and damaged in places that nothing short of complete repainting will ever make it look presentable. When, however, the work is in small, light sections it can be more easily handled in landing and shipping and is far less liable to damage. In the cars under notice each side below the plate is in seven sections each, of course of manageable size. The seats take apart so as to pack into a small space and thus reduce the charges for freight, generally measuring more than 40 cubic feet to the ton and being therefore charged for according to the space it occupies.

The following are the principal dimensions of these cars:

Length over frame...	35 ft. 0 in.
Width " "	8 " 3 "
" inside...	7 " 6 "
Weight inside centre of clear-story	7 " 5 "
" " " " end door.....	6 " 3 "
Diameter of truck wheels.	2 " 0 "
No. of passengers seated.....	46

Little is doing in the freight-car department at present; several cars are, however, being made for South America. These cars are of somewhat peculiar construction, English and American ideas on the subject being thoroughly well mixed, and a South American-Spanish-Portuguese flavor thrown in, until the cars are quite cosmopolitan in character, and presumably not such as would be constructed if the design were left entirely to the makers. Some of these cars are destined for the line which is to cross the Andes, and connect the Argentine Republic with Chili. The covered freight cars are mounted on four 33-in. chilled wheels, with a wheel-base of 10 ft. 6 in., the gauge being 5 ft. 6 in. The under-frame (with the exception of the end sills, which are of oak) is composed of iron I beams, measuring 6 in. × 3 in. The outside sills extend from end to end of the vehicle, but the intermediate longitudinals are not continuous, being cut to allow the cross bearers, which are placed in the same horizontal plane, to run right across between the side sills. Toward either end of the car, the intermediate sills rake toward the centre of the end sills, so as to give some diagonal strength, and support the buffing strains. Two entirely distinct sets of draw gear are used, presumably to enable the cars to run with narrow-gauge cars where the tracks are suitably laid. The narrow-gauge buffing gear is several inches below that for the broad gauge, which latter is fitted with a continuous draw-bar. The siding is of yellow pine with a hard-wood finish. The roof is curved in cross section, and the roof boards are laid longitudinally, and covered with galvanized corrugated iron, an ordinary foot-board for the brakemen being provided. The cars are very wide for their length, measuring 9 ft. 2 in. over siding, and only 19 ft. 8 in. long over frame. The sides overhang the sills several inches, wrought-iron brackets being used to effect a connection.

Some eight-wheel flat cars, measuring 29 ft. 4 in by 9 ft. over platform, are also being built for the same destination. The edge of the platform is protected by an angle-iron let in flush with the surface of the planking, which is further kept in place by two pieces of bar iron running the length of the car and also sunk flush, and serving as a continuous washer for the bolts securing the planking to the iron side sill. This no doubt makes an excellent job, but renders it difficult to renew a damaged floor plank. A third lot of freight cars for South America are very similar to the box cars above described, but are somewhat shorter.

The Jackson & Sharp Company report business to be so brisk that they have been obliged to refuse orders, having no less than 75 cars for passenger service in course of construction at the present time. A fine Woodruff sleeping-car is just completed, and a Woodruff parlor car, with extra large windows, will soon be finished. A very conveniently arranged officers' car for the Pittsburgh, Cleveland & Toledo Railroad is also under construction. Two passenger and combination cars are being built for the Marquette & Western. The cars are painted a bright canary yellow outside, and are finished internally in oak and mahogany, with canvas head-linings. Ten cars building for the Rochester & Pittsburgh are painted a Tuscan red externally, and finished internally in cherry. The pattern of the head-lining varies; one pretty design has a French gray ground, with silver lines and striping relieved by a little red at considerable intervals.

A handsome car is just finished for a Michigan line, the Pontiac, Oxford & Port Austin. The seats and backs are made of splines of hard wood, the seat being given the proper concave curve to conform to the natural outline of the human frame. The seats are cool, clean, and comfortable, but would be still further improved if some means were provided to cant the seat when the back is reversed. The car seats 54 passengers, and is heated by two Searles No. 2 heaters. The inside cornice fascia board is ornamented with some very handsome and well-executed carving in low relief. The canvas head-lining is divided into panels by broad bands of Lincrusta-Walton, and altogether the interior of the car has a very bright and handsome appearance.

Some second-class cars grained outside to imitate mahogany are being built for Chili. The first-class cars have panels of real mahogany, varnished, and it appears that Chilians, like other people, having more regard to the outward appearance than to the true inwardness of things, desired that the second-class cars should resemble the first-class, though made of a baser material, plain poplar, to wit. We fear these simple-hearted children of the Andes will discover that repeated doses of rain and sunshine will give the coaches a very dissimilar appearance, though the graining when new might deceive even an experienced woodpecker. The seats in the second-class cars are arranged in four rows running lengthwise of the car, the entire rows being back to back. The arrangement resembles that produced by two street cars side by side. A great many passengers can of course be accommodated by this arrangement, but each passenger has but a small allowance of knee room, and it must be difficult to enter or leave the car when it is at all full.

Six large sleeping cars are being built for the Mann Car

Company. These cars present several novelties of construction, and appear to embody the result of much ingenuity and obsevation applied to the laudable purpose of promoting the comfort of those who travel by night. We shall hope to refer further to these cars in an early issue.

Contributions.

The Stockton & Darlington Railroad.

CHICAGO, April 14, 1884.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In reading the account of the "First Five Years of the Railway Era," written by Mr. Horatio Allen for the columns of the *Railroad Gazette* and significantly marked "copyright," I notice, with surprise, the *labored* manner in which Mr. Allen strives to represent to your readers that the Stockton & Darlington Railway was merely a "*coal mine railroad.*"

If Mr. Allen, since I last saw him, has forgotten, history will remind him that such was *not* the case. The second act for the Stockton & Darlington Railway, obtained in 1823, contained a clause empowering the use of locomotive engines for the conveyance of *passengers* as well as merchandise, and on the 27th of September, 1825, that railway —*the first public railway in the world*—was opened for *public* traffic, both *passenger* and merchandise.

In 1875 the fiftieth anniversary of that event was celebrated in the quiet Quaker town of Darlington, when the festivities, which were on a magnificent and extensive scale, lasted two days, and 900 invited guests, all prominent railroad men, sat down at the banquet and afterward did honor to the memory of the railway pioneers. Every town and borough in Great Britain, as well as every important railway in the universe, including many American ones, was represented on that occasion, and other nations joined in what was recognized as a universal celebration of the "railway jubilee."

Darlington is everywhere known and recognized as the "birthplace of railways," and Edward Pease is always spoken of as the "father of railways," while Shildon, a few miles from Darlington, where Timothy Hackworth built the "Samson," which was on exhibition at the "Railway Exposition" in this city last year, is always known as "the cradle of the locomotive." The first railway works in the world were established at Shildon by the late Timothy Hackworth. CHARLES MACNAY.

[It is hardly fair to say "the labored manner in which Mr. Allen strives to represent that the Stockton & Darlington Railway was merely a coal-mine railroad." What Mr. Allen says is simply: "The time came when the construction of the Stockton & Darlington Railroad, a coal-mine railroad, under the direction of Stephenson, afforded the opportunity for the locomotive," etc. The fact that an overwhelmingly large proportion of the traffic of this road consisted of coal when Mr. Allen saw it might naturally lead him to speak of it as a coal road, especially as there was nowhere in his article any reference to the public use of railroads. No one is likely to deny the significance of the Stockton & Darlington Railroad, least of all Mr. Allen, who went to England to see it, and studied it when it was the only important railroad in the world. An account of the jubilee in 1875 was published in the *Railroad Gazette* at the time.—EDITOR RAILROAD GAZETTE.]

The Joy Valve Gear.

NEW YORK, April 12, 1884.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Referring to the statement on page 283 of the *Railroad Gazette* that "it seems exceedingly difficult to ascertain the number of locomotives running with Joy's gear," there need be no mystery about it. From whom has your contributor made inquiry? Mr. Joy alone can furnish the information, but neither he nor I have been applied to for it. I have asked Mr. Joy, however, to furnish a statement showing the number in use in this country and abroad, and when received will cheerfully furnish it for publication.

I am not aware of any person having made the alleged assertion regarding the Great Western Railway of England, and cannot therefore judge of the necessity or propriety or otherwise of any denials by Mr. Barnett of Canada. The whole matter strikes me as being entirely gratuitous.

Nor am I aware (but positively deny) that the ultimate replacing of the link motion on engine 411 of the Philadelphia & Reading Railroad after the breaking of the Joy gear on that engine proved anything against the Joy valve gear. The Reading Company immediately fitted another engine, making some changes, which engine is now running.

The number of Joy gear engines on the Cape railways has been largely increased, and others have recently been put in hand, making about 100 in all now in use on those roads.

As you question my authority for the statements contained in my note last week I quote the following from a letter recently received from Mr. Joy and which gives the facts in his own words:

"A note in the *Railroad Gazette* calls attention to Mr. Worsdell's not putting the Joy gear on freight engines he is now completing. This is calculated to lead others to think that he is not satisfied with it. The facts are these: Mr. Worsdell originally sent for me and said he had twenty engines to build, ten expresses and ten freights. He showed me the general drawings and said he could put the Joy gear on ten of them. At that time the Joy gear was new on the Great Eastern Railway; had never been used. He elected to put the Joy gear on the ten expresses and the link motion on the ten freights, and all of them were immediately put in hand.

The ten Joy engines were finished, and since that time 40 other Joy engines have been completed on that road. The ten link engines referred to, however, were left uncompleted and are only now being finished off.

Mr. Worsdell is now bringing out another type of fast engine with the Joy gear. Meanwhile no more freight or other engines with the link gear have ever been put in hand or ordered, but Mr. Worsdell has said to me several times while walking through the shops—pointing to the ten link engines in course of completion—that he wished he had had them all like the expresses; same sized cylinder and Joy gear, and also that his next freight engines will have the Joy gear, and cylinders a little larger than the expresses. This statement comes direct from the principal, and is not based on employé gossip." WAYLAND TURNER.

[Though Mr. Turner objects to our statement that it was difficult to ascertain the number of locomotives running with Joy's gear, it seems that he is himself, though he is agent for it, unable to give the number, for he says he has written to England for it. In his first letter Mr. Turner said that he "had ascertained from Mr. Worsdell," etc, etc. But it seems that it was not from Mr. Worsdell, but from Mr. Joy, that he obtained his information. Mr. Joy we believe to be a truthful man, but the public will hardly put that trust in Mr. Joy's report of what he understood Mr. Worsdell to say as in Mr. Worsdell's own statement.—EDITOR RAILROAD GAZETTE.]

Reform in Car-Coupling.

SHARPSVILLE, Mercer Co., Pa., Feb. 18, 1884.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The Board of Railroad Commissioners of Massachusetts has in its annual reports very earnestly and persistently called attention to the evils arising from the use of the link-and-pin coupler on the railroads of the country, and has sought to bring about some reform with a view to "lessen the amount of suffering and death arising from accidents met in coupling and uncoupling freight cars;" but in its report for the year ending Sept. 30, 1883, it virtually abandons the task as being beyond the power of performance.

Speaking of obstacles in the way of accomplishing a betterment of the situation it says that in the selection of an automatic coupler "the question is complicated by conflicting interests," and that to the adoption of any improved coupler "the serious obstacle of *cost*" is opposed.

The Commissioners close their remarks on this subject by saying:

"It is probable that the freight-coupler question will never be satisfactorily settled until the law of liability of employers to employés has been thoroughly revised. The working of a just law covering this whole subject would be likely to supersede the necessity for special legislation as to couplers and drawbars."

Thus the discouraged Commissioners put the matter off their hands, without making any suggestion as to what particular matters a revision of the law of liability of employer to employé should be made to affect.

Litigated questions of liability of employer to employé are determined by common law, the usages and rules of action in which have come into force by adoption. The sentiment of the decisions of courts of justice, which have made the law in question, is, essentially, that when through the fault of the employer the person employed receives injury the party in fault should adequately compensate the party damaged.

Under this sentiment lies the consideration, partly humane and partly politic, that employers will for the protection of their pockets do what they would not do simply for the protection of the lives and limbs of their employés, and that in presence of a law the operation of which makes the provision of proper means for protecting employés from bodily harm cheaper than paying damages to them for injuries suffered in consequence of the absence of such means, risks of injury to the employed will be reduced to a minimum; whereby not only will the employés be saved from suffering and death, but the community saved from loss of usefully active members, and from expense presumably to follow such loss in shape of outlay for support of disabled persons and destitute families.

The objective of the liability law is, apparently, just what it should be. But under rulings and decisions heretofore made, in cases in which the law has been invoked to succor railway employés mangled in coupling cars, and still operative as authorities in such cases, the law is administered in accordance with a view of the questions involved that is materially narrower than that reached by many of those gentlemen who in the discharge of their duties as railroad commissioners have acquired a competent understanding of certain prevailing conditions, an acquaintance with which is in almost every such case necessary to an equitable determination of the cause litigated.

When the courts shall have adopted the broader view in this matter the process in liability cases will be modified and liberalized; testimony, explanatory and illustrative of conditions and circumstances, that is now excluded will be admitted in evidence in such cases; and (statutes limiting recovery of compensation having been repealed) the objective of the law may be reached with certainty, if not always with absolute directness.

Special legislation "as to couplers and drawbars," or as to any other appliances or implements provided by employer for use by employés, is to be deprecated. No happy result in the coupling matter is attainable through legislation like that, for instance, by aid of which Mr. Bergh compels obedience to his dictates forbidding the use of this, that or the other device in harnesses and like appliances by him adjudged "cruel;" nor through enactments such as have sometimes been made, declaring certain railway apparatus to be a sufficient provision for insuring the safety of trains in certain specified operations, and authorizing companies using that apparatus to omit precautions demanded of companies that do not use it.

The courts say that a railroad company does not discharge its whole duty to the traveling public if it does not use in its track, cars, bridges and service the best materials, devices and modes. We desire to have them say, also, that, where an employé of a railroad company suffers injury while in discharge of his duty, in coupling cars or otherwise, the company is in fault if it has not provided for use by the employé the best appliances known.

Questions as to what materials, or modes, or devices are "best," or as good as any in use, or as to what the age demands in the way of appliances, are not to be determined by legislators. Conclusions in such matters arrived at by an association of specialists, such as that of the Master Car-Builders, for instance, are *ex parte*, and can obtain only a limited authority. There is no recognized authority in the "coupler matter."

Questions of the nature of those indicated are raised in almost every suit brought against a railroad company for damages for personal injury, and the determinations thereof made in the courts are the only determinations that are positively effective.

Where a railroad bridge breaks down, causing injury to a passenger, and that passenger sues for damages, claiming that the bridge was faulty in design or proportion of parts, expert testimony may now be had affording court and jury all the information necessary to an intelligent decision as to the validity of the claim. But where the plaintiff is an employé injured in using a coupler, he will not, as matters now stand, take much by his motion should he set up a claim that the coupler was faulty in design. The answer will be: The coupler was as good as any in use; "dangerous," to be sure, but as good as any. The inquiry in this direction is, almost necessarily, narrowed to this: Was the coupler broken, or "out of order?" and, to put the matter briefly, the decision will be to the effect that if *not* "out of order" it was a good and proper coupler.

Court and jury may be thoroughly convinced of the fact that the coupler used is a murderous man-trap, but as long as there is no competent refutation of the claim made by the railroad company that the coupler, murderous as it is, is as good as any procurable, they cannot find the company in fault for using it.

In order to establish the broad reform that policy and humanity alike demand we must acceptably recommend to the courts that broader and more liberal view and practice of which we have spoken, the adoption of which will be in effect a revision of the liability law; and must at the same time elaborate the perfect coupler that is to be the "standard," and obtain for it a practically universal recognition.

We cannot make much progress in these directions until we shall have secured in behalf of the cause in hand the intelligent approval, the hearty sympathy, and active cooperation of the public. To do this we need, first, to acquaint the community at large with the material facts in the "coupler matter," of which it now has only a very imperfect knowledge.

The annual reports of the several boards of state railroad commissioners make approximately accurate exhibits of the deaths and injuries resulting from railroad accidents in each of several states; but as no state exacts from each of its railroad corporations an explicit statement of the cause and all the material circumstances of each and every accident that occurs on its road whereby any person is injured, fatally or otherwise, no state report contains exact information as to the number and character of injuries resulting from the use of the deadly coupler in question; nor, indeed, any exact information regarding accidents of any class, except in special cases concerning which the Commissioners have made special inquiry and report. The Commissioners cannot make explicit classifications of accidents, because the returns made to them by the railroad companies do not afford the data necessary to such classification. As illustrating the insufficiency of the returns aforesaid, I cite a tabulated statement found in a state report for 1883, in which of the whole number of accidents mentioned 97, constituting more than 36 per cent. of the whole are set down as having resulted from "*various causes.*"

But upon examining these reports one has no difficulty in finding ground for the conclusion that the loss of life and limb caused by accidents in coupling and uncoupling cars is very serious, and in view of certain notorious facts he must conclude, further, that except in a very few cases these accidents are directly referable to the use of the crude and clumsy link-and-pin coupler. The reports of the Railroad Commissioners are, however, not sought and carefully read by the public; no state officer feels himself called upon to cull from such report any particular fact, or set of facts, and prominently and persistently advertise the same, and no journalist has, as yet, persistently kept before his readers an exhibit of those facts which would, were they generally known and duly considered, awaken the public to an active interest in behalf of reform in this coupling matter.

Meantime the evils referable to the existing situation are growing with the enlargement of our railroad service. The exigency of the case is extreme.

As the Massachusetts Commissioners say, when commenting on the slight progress toward reform made by the Master Car-Builders' Association, "while we deliberate the brakemen perish. But the Association named has repeatedly "recommended" the adoption by the railroad companies of "some" proper automatic coupler. It has no power to do much beyond that.

The maintenance in use of the link-and-pin coupler and its congeners is a public nuisance in that it works mischief and damage to the community at large; and as to the brakemen and yardmen injured, or threatened with injury, it is a private nuisance. But the brakemen and yardmen will not combine to procure the abatement of that nuisance. To the hardihood universal among them any course suggesting a shrinking on their part from danger would seem shameful.

Let us then, in behalf of the brakemen, as persistently and conspicuously as we can, present to the public the facts: That, annually, on the railroads of the United States, employés to the number of one thousand, or more, are killed, and more than four thousand seriously injured, while in the performance of their duties. That of this multitude of killed and wounded about 75 per cent. are trainmen; that about 10 per cent. of the deaths, and about 40 per cent. of the serious injuries are the result of accidents met in the operations of coupling and uncoupling cars, such accidents now causing yearly serious injuries to more than 1,600 men, and fatal injuries to about 100 others; that of the men "seriously injured," as aforesaid, many are maimed in the hand or arm, and many are permanently disabled for any labor; that of those killed and injured in coupling cars almost all are freight-brakemen or yardmen; and that as none but a man intelligent and ready, quick of eye and ear, hardy, vigorous, agile, and fearless, can effectively perform the duties allotted to one in either of the grades of service named, the result is that these killed and wounded and maimed are with but few exceptions young men of good physique and of more than average ability, generally; that in stating the number of deaths and injuries, respectively, directly referable to the use of the link-and-pin coupler, we should add to the 100 deaths and 1,600 or more injuries, caused each year by accidents in coupling and uncoupling cars, a considerable percentage of those caused by the breaking in two of freight trains.* That in order to satisfy the demands of the freight-traffic of the country trunk-line companies have necessarily to haul over their roads freight cars belonging, respectively, to other railroad companies, to transportation companies, and to individuals; that to do this freight cars of various classes, coming from several roads, are necessarily indiscriminately coupled in train; that because in this country every builder of a freight-car fits it with drawbars and couplers (and deadwoods, when he uses any) of size, shape, material and arrangement to suit his own notions, crude or otherwise—almost every railroad company having several varieties of appliances of this kind in use on its road—the drawbars and couplers in a train so made up are of differing patterns and are attached to the cars in differing ways, so that in some such trains the couplers of no two cars are alike in pattern and arrangement; that the condition just described largely aggravates the dangers to which trainmen are exposed through the use of the link-and-pin couplers, and that the risks incurred by these men would be much reduced (even were the link-and-pin system retained) were all freight carcouplers of uniform pattern throughout, and set all at one and the same height above the rail, the coupling-pins all of uniform size and pattern, and the dead-woods, and other parts of the car adjacent to the couplers uniform in size and arrangement. That notwithstanding the facts just stated, of which every man experienced in the details of railroad operation is aware, the only noteworthy movement toward establishing uniformity in any one of these respects yet made, is that of the Master Car-Builders' Association, in consequence of which the centre of the draw-head, in new standard-gauge work, is now generally placed at a height of 33 in. above the rail, this movement having been materially aided by the consideration that uniformity of height of drawbar is conducive to safety of trains; that while possibly the railroads are, as a recent writer on the subject says they are, "as sick of the link and-pin as the humanitarians can be," they have not yet joined to call a special consultation of doctors in the case. I believe, however, that the public will approve the assertion that I make in this connection, that while it has no doubt that considerations of *cost* do and will influence the railroads in their treatment of the matter under discussion, it does not in the least allege that the corporations are therefore sordid or mercenary, nor pretend to believe that the cost of the necessary reform will not be very great.

It will recognize the magnitude of the task imposed, but it will certainly insist that the task be performed; and that as promptly as may be.

Let us further assure the public that the link-and-pin coupler is *not* a "necessary evil," and that the only serious obstacle in the way of speedily putting a proper automatic coupler in the place of each and every link-and-pin coupler in this country is the *cost* of so doing. And as the cost let us say: There are in the United States at this time about 550,000 railroad cars, classed as freight equipment, that are fitted with link-and-pin couplers of divers patterns.

Suppose that the aggregate *net* cost of refitting this entire equipment, within a period of two years, with a proper automatic coupler, would be $6,600,000, or $12 per car; then an impost of eleven mills on each ton of freight to be carried by rail in the period named would produce a sum more than sufficient to cover that cost.

This calculation of the impost per ton necessary to produce the $6,600,000 within the two years is based on an assumed aggregate annual tonnage only about 10 per cent. greater than the actual aggregate tonnage of 1880.

The Lake Shore & Michigan Southern Railway hauled in 1881, exclusive of company's supplies, 9,164,508 tons, and in 1882, 9,195,538 tons of freight—an aggregate of 18,360,046 tons. In 1882 the company owned 16,796 cars classed under the head of freight equipment. The cost of refitting this number of cars at $12 each would be $201,552, while the impoet of eleven mills per ton on the freight hauled in the two years specified would amount to $201,960.50.

Assuming that the aggregate passenger traffic of the country in the two-year period will be only 10 per cent. greater per year than the actual traffic of 1880, I calculate that an impost of 1¼ cents on each ticket sold in the period, *exclusive of season tickets*, would produce more than $6,600,000.

Since several years ago the passenger traffic of the Lake Shore line has increased at the rate of more than 10 per cent. per *year*. In 1882 this line carried 4,118,832 passengers. Suppose it to increase its traffic at the rate of 10 per cent. per year through 1884 and 1885; then in the two years named it will carry 10,463,950 paying passengers; and the impost necessary on each ticket to produce $201,552 would be very nearly two cents. But as the average travel of the passengers on that line is considerably greater than fifty miles, while the average travel of the railroad passengers of the entire country is no more than 28 miles, the Lake Shore passengers' tax, per mile of travel, would be even smaller than that of the average passenger of the country at large.

As to "delay of cars" necessarily to be caused by the operation of refitting we may remark: that the average freight car of the country stands still now something more than 75 per cent. of the time; and that a little extra exertion to secure dispatch generally will compensate any delay to be caused by the refitting.

I have said that the cost is the only serious obstacle in the way of a speedy introduction of a proper automatic coupler, and this notwithstanding a recent statement that "the reason why a perfect automatic freight coupler has not been adopted is because there is as yet no such coupler, even on paper."

Up to date United States patents to the number of 2,300 have been granted to inventors of contrivances described as "car-couplers."

Hardly one in a hundred of these patentees has evinced a thorough acquaintance with those details of car construction to which, in order to recommend itself to the car-builder, a coupler must conform, nor indicated any familiarity with the work of trainmen and yardmen and the varying conditions under which that work is done. Still, of the many inventors of couplers there are several, each of whom has produced a device well calculated to perform the work for which it was designed, the object of each such inventor having been to provide a coupler so contrived that when used with one of like pattern it will work automatically to couple cars, and in uncoupling may be operated by a person standing outside of track rail or, if need be, on top of the car to which the coupler is attached; while in making or breaking connection with a coupling of any one of the several patterns now in use it will work at least as well and effectively as the ordinary link-and-pin arrangement does and not *add* to the danger of operating the link-and-pin coupler with which it may be used.

To produce an "automatic" freight-car coupler that will work surely and effectively with others of the same pattern, all being set at one height above rail and otherwise uniformly arranged, no great outlay of mechanical genius is necessary. The production of a coupler that will satisfactorily serve through the "transition" state of the cars, during which it must effect the operations above outlined, is an undertaking in which the inventor encounters some real difficulties, certainly; but none of these is insuperable.

A test properly organized and conducted (under the plan suggested in the *Railroad Gazette* some time ago, or some other equally as promising) will bring to light a coupler that will be found perfectly efficient in the operations in question.

With the foregoing statements before it the public will, I trust, wake up to an appreciation of the fact that the situation demands action on its part.

At the same time I respectfully suggest to the Massachusetts Railroad Commissioners that they issue a circular letter inviting Commissioners of other states to meet them in convention at an early day for the purpose of taking some concerted action looking to the constitution of a commission to be charged with the duty of making a thorough examination of the "car-coupler matter," and reporting thereon to a standing committee of the convention, with recommendations as to further steps to be promptly taken in the effort for the saving of life and prevention of suffering, the necessity for which effort the Commissioners of Connecticut, as well as those of Massachusetts, have already earnestly assented.

One can hardly doubt that, when advised of the considerations in view of which the constitution of a special commission such as that suggested appears eminently desirable if not positively necessary, each state Legislature will empower its board of railroad commissioners to join those of the other states in forming that commission; nor that when the convention, after having deliberately approved a report of the special commission, shall have made recommendations conformable to the sense of such report, the several legislatures will concurrently act on such of those recommendations as shall have been addressed to them.

The field of investigation necessarily to be covered by the Commission is wide, but it is measurably wide, and capable guides to every nook of it are everywhere to be found.

There is nothing abstruse in the matter to be examined.

Statistics and facts of all kinds necessarily to be aggregated and arranged are ready to the hand of the collector.

All the material conditions in the case are so obvious that no intelligent seeker will miss any of them.

The special commission should be composed of men pledged to devote undivided attention to the work assigned them.

In making up the commission the convention would perhaps experience some embarrassments, but they would not arise from any scarcity of available talent.

As to the mechanical part of the work of refitting the cars we may remark that the more than 14,000 hands of the more than 100 car works of the country, and the 90,000 shop hands of the railroad companies could, under stress of necessity, refit the whole freight equipment within a month after the delivery of the material without seriously interfering with the operation of the roads. J. M. GOODWIN.

*In November, 1883, there were eight reported instances of the breaking in two of freight trains whereby seven men were injured and one killed; this is below the monthly average of accidents and number of killed, but somewhat above the average number injured, through accidents of this kind.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

Atlantic & Pacific, annual meeting, at the office in Boston, May 15, at noon.

Central, of New Jersey, annual meeting, at the office in Jersey City, May 9, at noon. Transfer books close April 18.

Chicago, Burlington & Quincy, annual meeting, at the office in Chicago, April 30.

Dakota Midland, annual meeting, at the President's office in Ellendale, Dak, May 6.

Delaware & Hudson Canal Co., annual meeting, at the office in New York, May 13, at noon.

Lake Shore & Michigan Southern, annual meeting, at the office in Cleveland, O., May 7.

Michigan Central, annual meeting, at the office in Detroit, Mich., May 8.

Pittsburgh, Fort Wayne & Chicago, adjourned special meeting, at the office in Pittsburgh, at 11 a. m., on May 1.

St Louis, Alton & Terre Haute, annual meeting, at the office in St. Louis, June 2, at 2:30 p. m. Stock transfer books close April 25; registry of voting bondholders May 3.

Dividends.

Dividends have been declared as follows:

Boston & Providence, 4 per cent., semi-annual, payable May 1, to stockholders of record April 19.

Cincinnati, Sandusky & Cleveland, 3 per cent., semi-annual, on the preferred stock, and 2 per cent. on the common stock, payable May 1.

Concord, 5 per cent., semi-annual, payable May 1, to stockholders of record April 17.

Pacific Mail Steamship Co., 1¼ per cent., payable May 1. This is the first dividend.

Pullman's Palace Car Co., 2 per cent., quarterly, payable May 15, to stockholders of record May 1.

Railroad and Technical Conventions.

Meetings and conventions of railroad associations and technical societies will be held as follows:

American Society of Mechanical Engineers, Spring meeting, in Pittsburgh, Pa., on Tuesday, May 20.

Railway Car Accountants' Association, annual convention, in Richmond, Va., on Tuesday, May 20. Western members are requested to meet in Ashland, Ky., May 18; Southern members in Atlanta, Ga., May 17, and Eastern members in Washington, May 19, to proceed to Richmond together.

American Institute of Mining Engineers, spring meeting, in Chicago, beginning on Tuesday, May 27.

American Society of Civil Engineers, annual convention, in Buffalo, N. Y., beginning on Tuesday, June 10. Full arrangements will soon be announced.

Master Car-Builders' Association, annual convention, in Saratoga, N. Y., beginning on Tuesday, June 10.

Master Mechanics' Association, annual convention, in Long Branch, N. J., beginning on Tuesday, June 17.

Railway Telegraph Superintendents' Association, annual convention, in Boston, on Tuesday, June 17.

General Baggage Agents' Association, semi-annual meeting, in Boston, on Wednesday, July 16.

Master Car-Painters' Association, annual convention, in Boston, on Wednesday, Sept. 3.

Road-Masters' Association of America, annual convention, in Indianapolis, Ind., on Wednesday, Sept. 10.

General Time Convention, fall meeting, at the Continental Hotel, Philadelphia, on Thursday, Oct. 9.

Southern Time Convention, fall meeting, at No. 46 Bond street, New York, on Wednesday, Oct. 15.

American Street Railway Association, annual convention, in New York, on Wednesday, Oct. 15.

Foreclosure Sales.

The *Nevada & Oregon* road was sold in Reno, Nev., April 17, under a judgment of foreclosure, and bought by Mr. Moran, of New York. The road was intended to run from Aurora, Nev., northwest through Reno to Goose Lake, Cal., about 300 miles, and is in operation from Reno to Oneida, 31 miles; it is of 3 ft. gauge. By the last report there were $310,000 bonds outstanding. It is said that the purchasers will organize a new company and make arrangements to extend the road.

Trunk Line Passenger Agents.

A meeting of the general passenger agents of the trunk lines was held at the Commissioners' office in New York, April 21. The most important subject discussed was the supposed cutting of rates by railroad companies in conjunction with steamship companies. The through tickets to Europe and elsewhere from some of the inland cities are sold so low that there is reason to believe that both the steamship and the railroad companies must violate their agreements by cutting the tariff rates. This matter was discussed and inquired into at the meeting, but there was no proof of wrongdoing, and nobody was indicted or punished. The question of granting special rates to excursion parties also came up, and concessions in this respect were made to delegates to the

greenback party convention at Indianapolis in May, and to various society meetings.

Joint Executive Committee.

A meeting of the Joint Executive Committee, Passenger Department, began at the Commissioner's office in New York, April 22.

The first business of the session was to authorize the granting of the usual reduced rates to a number of the religious conventions to be held during the summer. The question of adjusting differential rates was taken up and discussed; and will doubtless be the chief work of the meeting, which may last through the week.

The second day was devoted to the discussion of the pooling contract which expires May 1, and several amendments were proposed. There was a general agreement, but no conclusions were reached. The meeting will continue for several days.

American Society of Civil Engineers.

The Society met on April 16, President D. J. Whittemore in the chair.

The paper of the evening was by Hamilton Smith, Jr., M. Am. Soc. C. E., "On the Temperature of Water at Various Depths in Lakes and Oceans."

The essential facts brought out that at depths of 75 to 100 feet below the surface the temperature of both ocean and lakes is practically constant throughout the year. Lake Geneva varies on the surface from 41° to 71.6° F. in summer and winter. At 164 ft. below the surface it only varies 0 75° from an average of 44°. Fresh Pond, Mass., ranges at surface from 33° to 82°; at 35 ft. below the surface, only from 34½° to 51°. Lake Tahoe, Cal., at 1,500 ft. below the surface has a constant temperature of 39.2°, about that of maximum density of water. The bottom of the ocean is about 31° at great depths. A very interesting description of an electric galvanometer thermometer was given, the enormous pressures of some 12,000 lbs. per sq. in. forbidding the use of any ordinary thermometer.

At the close of the evening, a new form of cross-section rod for railroad work was exhibited. The designer claimed, with full justice, that it was a decidedly better way to cross-section earthwork for construction than with the engineer's level. The particular device exhibited, however, seemed to be objectionable in this: that the horizontal and vertical rods were connected together by a clamp, making it clumsier to use than when the two are entirely distinct, especially on rough ground, without any sensible compensating advantage.

Arrangements were announced for the Convention of the Society to be held at Buffalo, N. Y., June 10 next.

Western Society of Engineers.

The 184th meeting was held in Chicago on Tuesday, April 15, Vice-President Randolph in the Chair.

The minutes of the preceding meeting were read and approved.

Mr. Lotz, for Committee on Machinery, announced that at the next meeting he would present plans and detail drawings for Weehawken Elevator, to be built for the West Shore & Ontario Terminal Co., at Weehawken, N. J.

The Committee on Order of Proceedings, through Mr. Cooke, presented a partial report, recommending that no business be transacted at the first meeting in the month.

The report was accepted and the matter referred back to the committee.

The Secretary presented a photograph portrait of Mr. George F. Kirby, the first one received under the recent resolution of the Society asking for photographs of members.

It was voted that a committee of three be appointed to consider, and report at the next meeting, upon the matter of extending some courtesies to the American Institute of Mining Engineers at its meeting in Chicago, May 27.

The Chair appointed Messrs. Jones, Wright and Cregier as this Committee.

The resignation of Mr. Robert Forsyth, as a member, was read and accepted.

Papers were presented, by Mr. Randolph on the "National Electric Signal," and by Mr. I. C. Chesbrough, read by Mr. Benezette Williams, on the "Location of the Northern Pacific Railroad Across the Rocky Mountains."

It was voted that these papers should be printed.

Western Railway Club.

A meeting of the club was held in Chicago April 16, when the committee appointed at the previous meeting recommended the rental of rooms on Adams street. This report was accepted. The permanent organization of the club was then completed by the election of officers to serve for one year.

A committee, consisting of Messrs. William Forsyth, H. S. Bryan and W. B. Snow, was appointed to prepare a report on the best material for and construction of car roofing, to be discussed at the next meeting. Regular meetings will be held on the third Wednesday in each month.

Southern Association of General Passenger & Ticket Agents.

The semi annual meeting of this association was held in Charleston, S. C., April 9, as briefly noted last week. The convention was called to order at 11 a. m., President B. W. Wrenn in the chair. Twenty-one members were present out of a total of 29, and one member was represented by special credentials.

The first business in order being the choice of place for the full meeting, Richmond, Va., was selected.

The making of passenger rates being in order the following resolution was adopted:

"*Resolved*, That summer excursion rates be made on a basis of 4½ cents per mile between all competitive points to which such tickets are sold. Tickets to be on sale from June 1 to Sept. 30, and to be valid for return passage until Oct. 31."

Resolutions were adopted recommending the making of special rates to the Exposition to be held in New Orleans in December next, excursion tickets to be available only for continuous passage in each direction, to be non-transferable, and to permit of 10 days' sojourn in New Orleans. From all points within a radius of 500 miles from that city rates to be fixed by agreement between the lines at interest. From points more than 500 miles distant, tickets to be sold as far as practicable at 4 cents per mile for the round trip. The Secretary was requested to communicate with the Western Association, with the New England Association, and with the committee appointed by the National Association of General Passenger & Ticket Agents, conveying to each a copy of these resolutions as the official views of this Association.

Special rates were granted to delegates to the International Sunday School Association at Louisville.

At the afternoon session special rates were granted for the general assembly of the Southern Presbyterian Church in Vicksburg, the meeting of the Cumberland Presbyterian Church, the Louisville Exposition, and the meeting of the United States Medical Society at Washington. It was resolved that during the continuance of the Cincinnati Exposition the roads in this association would be allowed to sell excursion tickets to Cincinnati and return at one unlimited fare per round trip.

The resolution to sell excursion tickets at one unlimited fare to the political convention at Chicago was laid on the table.

The following resolution was adopted:

"*Whereas*, The vote of this Association has prescribed 4½ cents by the short line as the standard of summer excursion rates;

"*Resolved*, That it is not deemed expedient to name lower rates to any special points of resort."

It was resolved that a committee of five be appointed to consider the propriety of establishing a rate bureau for the Southern Association, such committee to report at the next meeting.

The Chair named the following gentlemen as such committee: Messrs. Atmore, Wilson, Pope, Jas. L. Taylor and Slaughter.

A committee was then appointed to make the summer rate sheet, to report at the evening session.

At the evening session the committee had not completed the work. It was resolved that the rate sheet as compiled by the committee be published under the direction of the Secretary of the association. Also that the present head lines of the sheet be used with the following and such other additions as may be requested in writing by the members: Fernandina, Fla., Gainesville, Fla., Tallahassee, Fla., and Port Royal, S. C.

It was also resolved that all rate-sheets published within the limits of the Association be made a uniform size, the Jacksonville sheet being recommended as standard size. The convention then adjourned.

ELECTIONS AND APPOINTMENTS.

Alexandria & Fredericksburg.—The Trustees of this company have appointed Mr. James P. Kerr as their Auditor, to succeed Mr. John Crowe, deceased.

Atchison, Topeka & Santa Fe.—Mr. F. G. Gay has been appointed Commercial Agent for Mexico, with headquarters at El Paso, Texas.

Baltimore & Ohio Telegraph Co.—Mr. Benjamin F. Lloyd has been appointed Division Superintendent, with office at Newark, O. He was recently Manager for the Western Union Telegraph Co. at Pittsburgh.

Baltimore & Potomac.—The death of Mr. John Crowe, April 12, having made a vacancy in the office of Auditor, Mr James P. Kerr is appointed Auditor from April 21, and Mr. John S. Ruth, Assistant Auditor.

California & Nevada.—The officers of this company are: President, John W. Smith; Vice-President, J. S. Emery; Secretary, E. A. Phelps; Treasurer, C. F. Burrell.

Chicago, Burlington & Quincy.—Mr. W. H. McDoel has been appointed General Agent at Kansas City. He has been General Freight Agent of the Hannibal & St. Joseph.

Chicago Railroad Association, Passenger Department.—The following officers have been elected for the ensuing year: President, Percival Lowell; Vice-President, A. V. H Carpenter; Secretary and Treasurer, John J. Byrne; Executive Committee, W. A. Thrall, A. H. Hanson, E. St. John.

Cincinnati Northwestern.—This company has elected directors as follows: Clement Bates, T. C. Campbell, John H. Davey, W. W. Innis, Robert Simpson, W. T. Simpson, Joseph Wright. The board elected John H. Davey President; T. C. Campbell, Vice-President; W. T. Simpson, Secretary; Robert Simpson, Treasurer.

Des Moines, Osceola & Southern (N. G.)—Mr. Frank G. Jones has been appointed General Freight and Passenger Agent, in place of T. W. Armstrong, resigned.

Evansville & Terre Haute.—Mr. E. O. Hopkins has been appointed Assistant General Freight Agent of this road.

Fort Wayne, Cincinnati & Louisville.—Mr. Robert T. Kinnaird has been appointed General Passenger Agent in place of George B. Campbell, resigned.

Gulf, Colorado & Santa Fe.—Mr. W. J. Sherman has been appointed Engineer of Maintenance of Way, with office in Galveston, Tex. He was recently Chief Engineer of the Louisville, Evansville & St. Louis road.

Ilwaco, Shoalwater Bay & Gray's Harbor.—The officers of this company are: President, L. A. Loomis; Directors, A. W. Berry, I. W. Case, H. G. Gile, B. A. Seabury. Office at Astoria, Oregon.

Louisville, New Albany & Chicago.—Mr. C. C. F. Bent, Superintendent of Transportation, has announced the following appointments which took effect April 10: D. E. Finley, Chief Train Dispatcher, in charge of the movement of trains, handling of power and distribution of cars for the entire road. L. M. Harris, Train-master, with immediate charge of all trainmen and supervision of yards. LaFayette, Ind., will be the headquarters of these officers.

Michigan Central.—Mr. Robert Miller has been appointed Assistant General Superintendent, and will perform such duties as may be assigned to him by General Superintendent Brown. Mr. Miller has been Master Car-Builder of the road for a number of years.

Nevada County.—At a meeting of the directors in Grass Valley, Cal., April 2, the following officers were appointed for the ensuing year: John F. Kidder, President and Manager; Peter Johnston, Vice-President; George Fletcher, Secretary and Auditor.

New England General Passenger & Ticket Agents' Association.—The following officers have been elected for the ensuing year: President, N. P. Lovering, Jr., Passumpsic; Vice-President, F. E. Brown, Concord; Secretary, C. A. Waite, Worcester & Nashua; Member of Executive Committee, John A. Fenno, Boston, Revere Beach & Lynn.

New Jersey State Assessors of Railroad Taxation.—The Governor of New Jersey has nominated and the Senate has confirmed as members of the Board of Railroad Assessors under the new law: Edward Bettle, of Camden, Abraham M. Reynolds, of Newark, and Alexander G. Cattell, of Camden. The Governor nominated Allen L. McDermott, of Jersey City, as the fourth member of the board; the Senate at first rejected, but afterwards confirm him. Mr. Reynolds was Commissioner of Railroad Taxation under the old law.

New York Cable Railway Co.—This company has been organized with the following directors: Homer A. Nelson, William S. Williams, Wallace C. Andrews, Roland N. Hazard, Thomas F. Ryan, Augustus C. Moss, Thomas W. Evans, Joseph J. O'Donohue, W. P. Shinn. The board elected Wallace C. Andrews President; Thomas F. Ryan, Secretary and Treasurer.

New York, Philadelphia & Norfolk.—The following appointments are announced: Superintendent, James McConkey; Secretary, M. H. Taylor; Treasurer, J. G. Cassatt; Auditor and Assistant Secretary, Wm. Cariss, Jr. The office of the Superintendent is at Princess Anne, Md.; those of the other officers are at No. 305 Walnut street, Philadelphia.

New York, Wood Haven & Rockaway.—The board has elected James M. Oakley President; John B. Thompson, Vice-President; D. C. Fisk, Secretary and Treasurer.

Northern Central.—The death of Mr. John Crowe, on April 12, having made a vacancy in the office of Auditor, Mr. James P. Kerr is appointed Auditor from April 21, and Mr. John S. Ruth, Assistant Auditor.

Northern Pacific.—Mr. A. D. Edgar has been appointed Assistant General Freight Agent, with office in Portland, Oregon. Mr. Edgar was appointed General Eastern Agent only a few days ago, but that appointment is recalled by the present one.

Oregon Improvement Co.—Mr. Elijah Smith, of Boston, has been chosen President of this company. Mr. C. H. Prescott, late President, remains with the company as Vice-President.

Oregon Railway & Navigation Co.—Mr. A. L. Stokes is appointed General Freight and Passenger Agent, with office in Portland, Oregon. He was recently on the Northern Pacific.

Pensacola & Atlantic.—At the annual meeting in Pensacola, Fla., April 16, the following directors were chosen: W. A. Blount, John A. Green, W. F. McCormick, Cushman Quarrier, Milton H. Smith. The only new director is Mr. Blount, who succeeds G. A. Stanley, deceased. The board elected Milton H. Smith President: W. D. Chipley, Vice-President; R. M. Cary, Jr., Secretary and Treasurer. The following officers were continued in their respective positions: F. B. Bonifay, Treasurer; F. C. Sheppard, General Freight and Passenger Agent; C. A. Davies, Chief Engineer and Road-master.

Preston & Smithville.—Mr. D. B. Harrell is President of this new company, with office at Preston, Georgia.

Saratoga, Mt. McGregor & Lake George.—Mr. Titus Sheard has been chosen a director to fill a vacancy in the board.

Washington, Cincinnati & St. Louis.—At a meeting held in Harrisonburg, Va., April 18, the following were chosen: President, Archer N. Martin, New York; Directors, J. W. F. Allemong, J. S. Loose, Harrisonburg, Va.; V. L. Boyce, Boyceville, Va.; H. D. Cooke, Washington; C. E. Kimball New York.

PERSONAL.

—Mr. T. W. Armstrong has resigned his position as General Freight and Passenger Agent of the Des Moines, Osceola & Southern road.

—Mr. W. Bayard Cutting has resigned his position as a director of the Illinois Central Railroad Co. He has served on the board for eight years past.

—Mr. W. B. Jones has resigned his office as Superintendent of Telegraph of the Hannibal & St. Joseph road, to accept a position on the Texas & Pacific road.

—Mr. Eugene S. Abadie has resigned his position as Contracting Freight Agent for the St. Louis, Iron Mountain & Southern Division of the Missouri Pacific road.

—Emil Tilp, one of the best known Austrian railroad engineers, who had made important contributions to railroad literature, died suddenly March 23, aged 52.

—It is reported that Messrs. R. A. Anderson, Superintendent, and M. H. Dooley, Supervisor of Road of the Western and Atlantic Railroad, have resigned their respective positions.

—Mr. L. S. Banks, for several years past connected with the engineering department of the Gulf, Colorado & Santa Fe road, died in Dallas, Tex., April 19. He had been sick for some time.

—Mr. F. C. Nims has resigned his position as General Passenger Agent of the Denver & Rio Grande road. Mr. Nims will take a rest of several months, and will probably make a short trip to Europe.

—Major R. A. Bacon, well known among railroad men from his long experience as Superintendent and General Passenger Agent on several roads, and recently Secretary of the Georgia Railroad Commission, has settled in Fort Worth, Tex., where he has purchased considerable property.

—In Toledo, O., April 16, Mr. George A. Sanderson, who recently resigned his position as General Freight and Passenger Agent of the Toledo, Cincinnati & St. Louis road, was presented with a pair of valuable diamond sleeve-buttons by the employes of that road. At the same time Receiver Craig presented him with a handsome scarf-pin.

—Mr. Marcius S. Bulkley, formerly General Superintendent of the Philadelphia & Reading coal docks at Port Richmond, Philadelphia, died in that city April 12, of paralysis of the heart. He was 73 years old. He entered the service of the Reading Co. in 1844, and for 26 years had charge of the distribution of all the company's coal coming to tidewater. In 1870 he resigned and engaged in business as a coal operator, leasing several collieries, and five years later retired from business altogether.

— The Milwaukee *Sentinel* says of Mr. H. C. Atkins, Assistant General Superintendent of the Chicago, Milwaukee & St. Paul road, whose death was briefly noted last week: "Mr. Atkins was stricken by paralysis while alone on one of the streets of La Crosse, last week, and lingered until 1:50 Sunday morning, when he passed away, surrounded by his family and a number of his friends. His remains were brought to this city by special train and conveyed to the residence of the family on Ffteenth street, whence the funeral took place yesterday afternoon, attended by hundreds of citizens and large delegations of railway men from all points in the Northwest.

"H. C. Atkins' railroad days commenced in 1857, when he came to Milwaukee from the East, and was given the position of baggagemaster on a train on the Milwaukee & Mississippi Railway, running with S. S. Merrill, who was then serving as conductor. When Mr. Merrill took the old Milwaukee & Watertown Railway he gave Mr. Atkins a conductor's sit on that road, to run between this city and Watertown, he serving in the capacity of general assistant to Mr. Merrill at the same time. When the road was given up by Mr. Merrill, and when the Milwaukee & St. Paul Co. was organized, Mr. Atkins was given the assistant superintendency of the Watertown & Portage Division as soon as it was completed. In September, 1865, he was appointed Superintendent of the Winona & St. Peter road, which position he held until June, 1867, when he was given the superintendency of the McGregor Western. One year later, when this road was consolidated with the St. Paul system proper, he was given the superintendency of the Prairie du Chien Division. A few years later D. A. Olin, now of the Racine & Southwestern Division, resigned the superintend-

ency of the La Crosse Division, to take the Western Union road, and that division was placed under Mr. Atkins' care. Another addition to his charge was made in 1875, at which time Russell Sage, Jr., resigned the superintendency of the Chicago Division, and his duties were transferred to Mr. Atkins. He was also given the Chicago & Pacific, when it was purchased by the Milwaukee & St. Paul Co., and also the Chicago & Council Bluff Division when it was built. In 1882 Mr. Atkins was promoted to his present position, that of Assistant General Superintendent, having under his charge the La Crosse, Chicago, Prairie du Chien, Chicago & Council Bluffs in Illinois, Chicago & Council Bluffs in Iowa, Mineral Point, and Wisconsin Valley divisions, together with all their branches.

"His family will be left in good circumstances, there being a large insurance on his life. It is said that the amount was increased recently by Mr. Atkins, by about $15,000."

—Colonel Charles G. Hammond, whose sudden death in Chicago was briefly noted last week, was born in Bolton, Conn., in 1804. When still a child his father removed to Chenango County, N. Y., where he grew up to manhood, attending the district school and afterward the academy at Whitesboro, and finally becoming principal of the academy. After teaching for a short time he settled in Canandaigua as a merchant, but in 1834 removed to Michigan, where he engaged in business. In 1839 he was sent to the Legislature, and some two years later was made Auditor-General of the state, in which office his labors were extremely useful in bringing the accounts and the tax system on the state out of the great confusion in which he found them. In 1845 he was appointed deputy collector at Detroit, and in 1852 he took charge of the freight department of the Michigan Central Railroad, removing to Chicago. The Michigan Central had then been lately completed, and upon Col. Hammond devolved the task of organizing his department and establishing a system of doing business. He held this office for three years, until 1855, when he was appointed General Superintendent of the Chicago, Burlington & Quincy, then comparatively a small road. He remained on this road for 10 years, during which time its growth was very rapid. In this positio n Col. Hammond was distinguished for the excellence of his business methods and his discernment in the choice of subordinates. Many railroad men now holding prominent positions received their first training under him. In 1865 he was compelled by ill health to resign his position, and entire rest and travel for several years were necessary to restore his health. In 1869 he was appointed General Superintendent of the Union Pacific road, then just completed. He took charge of this road at a time when its business capacities were hardly understood and found that the whole energies of the management had been devoted to the construction and completion of the road, and hardly any preparations had been made for its successful working and business management. Under his charge the various departments of the road were fully organized and brought into successful working. The labor, however, proved too great for his health and he was obliged to retire after about two years' service. He then returned to Chicago and accepted the position of Vice-President of Pullman's Palace Car Co., which he held for several years. Since his retirement from that office he has not engaged in active business, although he was prominent in several public enterprises and charitable institutions in Chicago. He was offered the position of Indian Commissioner by President Grant, but declined on account of his health. For nearly a year past he has been subject to fainting attacks and his death was not unexpected. Col. Hammond was well known and respected among railroad men for his uprightness and integrity and for his ability as an organizer. He leaves two daughters, one of whom has been for several years a widow, and the other is the wife of Mr. Max Hjortsberg, of the Chicago, Burlington & Quincy road. Notwithstanding the many prominent positions which he has held he leaves only a very moderate fortune.

TRAFFIC AND EARNINGS.

Grain Movement.

For the week ending April 12 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past eight years·

Year.	North-western receipts.	—Northwestern shipments.— Total.	By rail.	P. c. By rail.	Atlantic. receipts.
1877	2,517,399	2,268,531	1,881,480	84.9	2,321,586
1878	4,030,622	3,592,616	759,316	21.9	2,809,653
1879	2,503,486	3,256,099	3,256,099	100.0	5,086,829
1880	3,064,997	3,805,446	1,492,205	39.2	5,237,852
1881	3,765,907	4,110,869	3,337,380	81.2	4,147,460
1882	2,575,624	3,341,280	1,552,689	46.5	1,247,499
1883	2,999,666	2,260,563	2,052,958	90.8	2,904,435
1884	3,942,254	4,495,594	4,217,272	93.8	2,360,033

Thus the receipts of the Northwest markets for the week were nearly the same this year as last, but were less than in 1878, 1880 or 1881. They were 326,000 bushels less than in the previous week of this year and the smallest for a year.

The shipments of these markets were larger this year than in the corresponding week of any preceding year (though navigation was open in some of them), and 151,000 more than in the previous week of this year. The rail shipments were among the very largest ever made. The shipments down the Mississippi were 278,332 bushels, and have been exceeded in but two weeks this year. Thus the low rail rates do not appear to prevent river shipments.

The Atlantic receipts for the week were larger than in 1882, but with that exception were the smallest since 1877. They were 527,000 bushels *less* than the receipts the week before, and the smallest for four weeks, so that the large western shipments still seem not to have reached the seaboard.

Exports from Atlantic ports for five years during the week to April 11 have been :

	1880.	1881.	1882.	1883.	1884.
Flour, bbls.	135,561	148,980	88,262	144,721	109,098
Grain, bu.	4,449,420	3,692,301	896,764	1,958,683	1,925,317

The exports this year were nearly as great as last, which has not happened befor for a long time. The grain exports were 664,000 bushels (53 per cent.) more than in the previous week of this year and were the largest this year with a single exception.

Cotton.

Cotton movement for the week ending April 18 is reported as follows, in bales:

	1884.	1883.	Inc. or Dec.	P. c.
Interior markets:				
Receipts	27,750	27,244	I. 506	1.9
Shipments	38,858	53,676	D. 14,818	22.0
Stock, April 18	98,960	213,029	D. 114,069	53.6
Seaports:				
Receipts	30,274	66,527	D. 36,253	54.5
Exports	36,210	92,044	D. 55,834	60.7
Stock, April 18	605,599	734,252	D. 128,653	17.5

The total amount of cotton in sight, or actual shipments from plantations, is reported by the *Commercial and Financial Chronicle* for the cotton year (from Sept. 1) to April 18 at 5,484,475 bales, against 6,561,533 bales last year, a decrease of 1,077,058 bales, or 16.4 per cent.

Railroad Earnings.

Earnings for various periods are reported as follows:

	1884.	1883.	Inc. or Dec.	P. c.
Three months ending March 31:				
Ala. Gt. South	$266,781	$256,661	I. $10,120	3.9
Char., Col. & A.	216,543	248,770	D. 32,227	12.9
Ches. & Ohio	854,805	843,210	I. 11,595	13.8
Cin., N. O. & T. P.	574,181	567,322	I. 6,859	1.2
Col. & Greenville.	188,342	254,690	D. 66,348	26.0
Eastern	765,663	786,068	D. 20,405	2.6
Eliz., Lex. & B. S.	151,357	156,486	D. 5,079	3 3
Nash., C. & St. L.	604,306	598,815	I. 5,491	9.1
Net earnings	256,502	262,182	D. 5,680	2.2
N. O. & Nor'east.	107,648	16,473	I. 91,175	552.5
Rich. & Dan	956,773	941,419	I. 15,355	1.6
St. L. & Cairo	59,985	80,098	D. 20,113	25.1
Texas & St. L.	179,364			
Virginia Midland.	336,068	341,791	D. 5,723	1.7
Vicksburg & Mer.	125,139	140,099	D. 15,960	11.4
Vicks., Shreve. & Pacific	37,812	25,773	I. 12,039	46.7
Western N. C.	95,349	73,814	I. 21,535	29.1
Two months ending Feb. 29:				
Buf., N. Y. & P.	$346,307	$344,959	I. $1,348	0.4
Ches. & Ohio	546,694	505,416	I. 41,278	8.2
Net earnings	132,632	101,031	I. 31,601	31.3
Eliz., Lex. & B. S.	93,337	103,391	D. 10,054	9.9
Net earnings	11,800	10,268	I. 1,532	14.4
Oregon Ry. & N.	486,877	611,838	D. 124,961	20.9
Month of February:				
Buf., N. Y. & P.	$179,236	$147,069	I. $32,167	21.9
Ches. & Ohio	266,072	253,446	I. 12,626	5.0
Net earnings	67,023	60,776	I. 6,247	10.0
Eliz., Lex. & B. S.	45,949	55,948	D. 9,549	17.2
Net earnings	8,294	8,283	I. 11	0.1
Oregon Ry. & N.	187,503	233,238	D. 45,735	19.6
Month of March:				
Ala. Gt. South	$97,600	$89,615	I. $7,985	8.9
Char., Col & A.	68,236	84,043	D. 15,807	19.0
Ches. & Ohio	308,111	337,795	D. 29,684	8.8
Cin., N. O. & T. P.	231,600	227,475	I. 4,125	1.8
Col. & Greenville.	59,768	88,021	D. 28,253	32.1
Eastern	244,293	267,604	D. 23,311	8.7
Eliz., Lex. & B. S.	58,029	53,045	I. 4,975	9.5
Nash., C. & St. L.	206,163	206,819	D. 656	0.3
Net earnings	90,499	87,939	I. 2,560	2.9
N. O. & Nor'east.	33,110	7,488	I. 25,622	341.6
Rich. & Dan	356,109	352,414	I. 3,695	1.1
St. L. & Cairo	21,656	31,070	D. 9,414	30.4
Va. Midland	119,363	123,580	D. 4,217	3.4
Vicksburg & Mer.	38,900	43,803	D. 4,903	11.1
Vicks., Shreve. & Pacific	7,600	4,156	I. 3,444	82.0
Western N. C.	31,054	26,167	I. 4,887	18.8
Second week in April:				
Bur., C. R. & No.	47,709	47,981	D. 272	0.6
Canadian Pacific.	81,000	98,000	D. 17,000	17.2
Central Iowa	32,810	23,985	I. 8,825	36.8
Ches. & Ohio	76,484	67,204	I. 9,280	13.8
Chi. & Alton	164,205	163,435	I. 770	0.5
Chi. & East. Ill.	25,126	31,208	D. 6,082	19.2
Chi. Mil. & St. P.	462,000	472,027	D. 10,027	2.1
Chi. & Northwest	400,900	409,700	D. 8,800	2.1
Chi., St. Paul, M. & Omaha	125,400	94,300	I. 31,100	33.0
Eliz., Lex. & B. S.	14,065	13,745	I. 320	2.3
Long Island	47,099	41,199	I. 5,900	14.4
Louisv. & Nash.	263,480	216,900	I. 46,580	21 5
Mil. & Northern.	10,915	10,100	I. 815	8.1
No. Pacific.	339,500	172,100	I. 167,400	97.3
Peoria, Dec. & E.	15,524	16,977	D. 1,453	8.5
Roch. & Pitts	19,730	7,028	I. 12,402	169.3
St. L. & San F.	81,900	61,900	I. 20,000	32.6

Weekly earnings are usually estimated in part, and are subject to correction by later statements.

Coal.

Coal tonnages for the week ending April 12 are reported as follows:

	1884.	1883.	Inc. or Dec.	P. c.
Anthracite	763,746	452,585	I. 311,161	68.7
Eastern bituminous	169,437	167,930	I. 1,507	0.9
Coke	61,319	68,709	D. 7,390	10.7

The anthracite production this year compares with a week of half-time last year. For the succeeding week (ending April 19) there was an entire stoppage of production on the part of nearly all the companies.

Coke shipments show a decrease for the week, which has not been the case before for some time.

The coal tonnage of the Pennsylvania Railroad for the week ending April 12, was :

	Coal.	Coke.	Total.
Line of road	124,597	52,711	177,308
From other lines	67,060	8,608	75,668
Total	191,657	61,319	252,976

The total tonnage this year to April 12 was 3,575,616 tons, against 3,460,083 tons to the corresponding date last year; an increase of 115,533 tons, or 3.3 per cent.

The anthracite coal tonnage of the Belvidere Division, Pennsylvania Railroad, for the week ending April 19 was 12,737 tons. The total tonnage this year to April 19 was 463,315 tons, a decrease of 86,174 tons, or 18.6 per cent., as compared with last year.

Cumberland coal shipments for the week ending April 19 were 64,498 tons. The total shipments this year to April 19 were 633,102 tons, against 587,754 tons to the corresponding date last year, an increase of 45,348 tons, or 7.7 per cent.

Anthracite coal tonnage for March and the three months ending March 31, is reported as follows by the Official Accountant, Mr. John H. Jones, the statement including the entire production of anthracite coal, excepting that consumed by employés, and for steam and heating purposes about the mines:

	March		Three months	
	1884.	1883.	1884.	1883.
Phila. & Read.	610,689	536,488	1,957,442	1,477,142
Cent. of N. J.		366,061		950,874
Lehigh Valley	381,702	509,061	1,151,234	1,342,027
Del., Lack. & W.	342,172	371,132	994,794	1,018,019
Del. & Hud. Canal Co.	212,620	267,709	608,445	710,386
Penn. R. R.	325,689	188,578	641,444	515,896
Penn'a Coal Co.	78,760	105,592	246,645	298,897
N. Y. L. E. & W.	29,831	30,801	73,698	76,010
Total	1,981,463	2,375,512	5,673,722	6,389,251

New Jersey Central tonnage for this year is included in the Philadelphia & Reading shipments. The tonnage of the State Line & Sullivan road, amounting in March to 8,102 tons, is included in that of the Lehigh Valley road. In addition to the amount given above there were 36,531 tons transported from mines by the Delaware & Hudson Canal Co. during March, which is included in tonnage of other interests.

The decrease for the month was 394,049 tons, or 16.6 pe. cent.; for the three months, 715,529 tons, or 11.2 per cent. All the companies, except the Pennsylvania Railroad Co., show decreases both for March and for the three months This falling off will probably continue through April.

The percentage of the total tonnage credited to each company for the three months was as follows, New Jersey Central tonnage being included in the Reading both years, for comparison :

	1884.	1883.	Inc. or Dec.
Philadelphia & Reading	34.5	38.0	D. 3.5
Lehigh Valley	20 3	21.0	D. 0.7
Delaware, Lackawanna & Western	17.5	15.9	I. 1.6
Delaware & Hudson Canal Co.	10.7	11.1	D. 0.4
Pennsylvania Railroad	11.3	8.1	I. 3.2
Pennsylvania Coal Co.	4.4	4.7	D. 0.3
New York, Lake Erie & Western	1.3	1.2	I. 0.1
Total	100.0	100.0	

The stock of coal on hand at tide-water shipping points, March 31, 1884, was 588,229 tons; on Feb. 29, 1884, 632,-041 tons; decrease, 43,812 tons, or 7.4 per cent.

Hoosac Tunnel Line.

The following circular from General Manager Wm. E. Everest, of this fast freight line, is dated Buffalo, N. Y., April 18:

"Below please find numbers and initials of cars in this line:

			Inclusive. Ft.	Lbs.
Boston & Maine	H. T. L.	1 to 25	28	24,000
Eastern RR.	H. T. L.	501 " 525	28	30,000
Boston, Barre & Gardner	H. T. L.	601 " 620	28	24,000
Providence & Worcester	H. T. L.	701 " 730	30	24,000
Troy & Boston	H. T. L.	*801 " *930	28	
Troy & Boston	H. T. L.	901 " 939	28	
Troy & Boston	H. T. L.	1001 " 1125	28	
Fitchburg RR. (refrigerators)	H. T. L.	*1500 " *1599	28	
Fitchburg RR. "	H. T. L.	*1600 " *1780	28	
Fitchburg RR. "	H. T. L.	*2001 " *2400	28	
Fitchburg RR. (flats)	H. T. L.	2401 " 2450	32	
Grand Trunk (Gt. West. Div.)	H. T. L.	2501 " 2657	29 and 33	
Vermont & Massachusetts	H. T. L.	3071 " 4700	31	
Vermont & Massachusetts	H. T. L.	4701 " 4850	28	
Champaign, Havana & Wes.	H. T. L.	*5601 " *5700	28	
Chicago, St. Louis & West	H. T. L.	8201 " 8500	34	40,000
Chicago, Mil. & St Paul	H. T. L.	27000 " 27049		

"The mileage of all Hoosac Tunnel Line cars should be reported to owners direct, separate from their common or other line cars.

"The mileage of Champaign, Havana & Western cars should be reported to the Western Car Co., New York City. These cars should be returned to the Fitchburg Railroad.

"Troy & Boston 801 to 930, Fitchburg 2,001 to 2,400, and Champaign, Havanna & Western 5,601 to 5,700, when out of order, should be sent to Indianapolis Car Works for repairs.

"Cars marked above * to be reported separate from other cars owned by same roads.

"The movements of these cars should be reported to C. W. Cushman, Manager The Railway Car Association, Buffalo, N. Y."

The present circular supersedes that of March 1 last.

Pensacola Lumber Exports.

Shipments of lumber by sea from Pensacola, Fla., for the seven months from Sept. 1 to March 31 were as follows:

	1883-84.	1882-83.	Inc. or Dec.	P. c.
Hewn timber, cub. ft.	1,235,185	1,710,043	D. 474 858	27.8
Sawn timber, cub. ft.	4,234,672	3,116,348	I. 1,118,324	36.0
Lumber, ft	61,633,000	53,205,000	I. 8,428,000	15.9
Total, reduced to superficial ft	127,151,284	111,121,692	I. 16,029,592	14.4

The total number of vessels cleared this year was 328, against 299 last year. The statement includes both foreign and coastwise shipments.

Coal Rates to Buffalo.

Quite a sharp competition for the bituminous coal traffic to Buffalo has been going on recently between the Erie, the Rochester & Pittsburgh and the Buffalo, New York & Philadelphia roads. The Erie has now cut the rate from Western Pennsylvania to Buffalo to $1.05 per ton, and the Buffalo, New York & Philadelphia to $1.15. The Rochester & Pittsburgh road keeps the rate at $1.50, but it is thought it will soon follow the other roads.

Northwestern Traffic Association.

Commissioner George L. Carman, of the Northwestern Traffic Association, has issued a circular calling attention to the fact that in order to prevent delay to shipments for Canada the invoices should in all cases be attached to the original waybill that accompanies the freight.

He has also issued the following: "Notice is hereby given that agents of lines comprising the above Association have been instructed not to permit, under any circumstances, articles to be loaded or placed for transportation upon the top of box or stock cars, nor will they receive cars so loaded when coming from connecting lines."

Growth of a Texas Railroad Town.

A census of the city of Fort Worth, Tex., taken by order of the City Council, shows a population of 22,183. The Fort Worth *Gazette* says: "At the opening of the war the population was only 350, and there was little growth during those dark years. In 1876 there was an estimated population of 2,000, this number being attained by a rapid growth in consequence of the advent of the Texas & Pacific. In 1880 the census showed a population of 6,663, in 1882 something over 12,000 and now in 1884 22,183. Thus it will be seen that in the period of four years from 1876 to 1880 the population trebled and again during the four years from 1880 to 1884 it has more than trebled."

A New Chicago-Toronto Line.

The Michigan Central and the Canadian Pacific companies have completed an arrangement for the running of through freight trains between Chicago and Toronto. The new line is over the Michigan Central to Detroit, over the Canada Southern Division to St. Thomas, and thence over the Canadian Pacific to Toronto. A through passenger car will also be run over this line. As soon as the Canadian Pacific completes its arrangements the line will be extended to Montreal. This makes the new line from Chicago to Toronto entirely independent of the Grand Trunk.

RAILROAD LAW.

Carrying a Passenger Beyond a Station.

In the case of Eaton against the Cincinnati, Hamilton & Indianapolis Co., the Indiana Supreme Court has just decided as follows :

Appellee took passage on one of appellant's trains for a small station named Moorehouse, where she was to have been met by Mr. Graham, and taken to his home, some distance from the station. For some reason the train did not stop at Moorehouse and against her protest the conductor carried her to Julietta, where he directed her to get off, saying that a conveyance would be there to take her back to Moorehouse. There was no conveyance, and she was obliged to walk to Graham's house, a distance of five miles, where she arrived some time after 9 o'clock at night. Although appellee entered the train under an implied contract for her transportation to Moorehouse, when appellant carried her beyond that point, against her

will, it ceased to carry her as a passenger for hire and became a wrongdoer, responsible for whatever injury or inconvenience resulting therefrom. When appellant set appellee down at Julietta it did so at the peril of having to respond in damages for whatever injury she might sustain from being so carried out of her way, and she had a right to prove the various vexations, annoyances, frights, injuries and sufferings, both of a physical and mental character, to which she was subjected during her journey on foot to the house of Graham, and to have these taken into account in estimating her damages. Judgment affirmed.

Obligation to Keep Warehouse and Yard in Good Order.

In the case of Gleason & Harmon against the Central Railroad Co., the Georgia Supreme Court has just decided as follows:

1. A railroad company which owns a warehouse or place of deposit for goods and freight which are to be delivered to consignees stands upon the same footing as to liability for injuries to persons and property by reason of not having safe and secure roads and ways for ingress and egress to and from such freight as any other person. Its liability is the same as that of others in like circumstances; no greater and no less.

This Court has held that where a railroad had a cotton yard it was the duty of the company to keep the yard and flooring in such order for public use as not to occasion damage to property of those who are compelled to use it; and if damage results from the negligence of the company or its agents, it will be liable. If the property owner or his agent and the company were both at fault the doctrine of apportionment of damages would apply.

2. Where the Court has given in charge to the jury principles which are afterward embodied in separate requests by a party to the case, he is not bound to repeat them.

3. All the issues of fact having been fairly left to the jury and passed upon by them, there being no violation of law in the instructions of the Court, and he being satisfied with the finding, this Court will not interfere with his discretion in refusing a new trial.

Judgment affirmed.

OLD AND NEW ROADS.

Alabama Great Southern.—At the general meeting in London, England, recently, the report presented for 1883 shows that the gross earnings of the line were $1,058,763, as compared with $856,757 in 1882, showing an increase of $202,005, or 23.6 per cent. The receipts per mile in 1883 were $3,589, as against $2,904 in 1882—an increase of $685 per mile. The passenger receipts show an increase of 38 per cent. The directors regret that the operating expenses amounted to 71.14 per cent., as against 70.08 in 1882. It is hoped that this figure may be considerably reduced in the current year. Of the 25,000 additional A preferenee shares, the issue of which was authorized in 1883, 6,000 were placed during the year. The accounts of the American corporation show a balance to the credit of net revenue of $198,278, or £40,798, which includes the sum of $2,959, or £609, brought forward on Dec. 31, 1882. After providing for the dividend on the A preference shares and for the payment of the subsidy to the Alabama, New Orleans, Texas & Pacific Junction Co. to Dec. 31, 1883, there remains a balance of £4,832, which the directors recommend should be carried forward.

Atchison, Topeka & Santa Fe.—This company's engineers are surveying a line from Socorro, N. M., to Silver City, where connection will be made with the branch from Deming which the company purchased a few months ago. It is said that the line will be continued from Silver City, southwest to Benson, Arizona. This branch, if built, will give the company a connection with its Sonora line independent of the Southern Pacific.

This company has let a contract for the construction of extensive wood preserving works at Las Vegas, N. M., where ties and timber for use on the road will be treated.

The Lake Valley Branch of this road is completed, and was opened for traffic this week. It is one of the branches built under the New Mexican Railroad charter and runs from Nutt, N. M., 28 miles northeast of Deming, northwest to Lake Valley, a distance of 18 miles.

Boston & Albany.—The Boston *Advertiser* of April 18 says: "This company presented a petition to the Newton Board of Aldermen yesterday afternoon, asking that the location of the Newton circuit road, as now surveyed, be granted. A hearing on the matter was fixed for May 6. The estimated cost of the construction of the line, as now surveyed, aggregates $205,318, which is divided as follows: Land damages, $23,295; excavation and filling, $60,000; masonry, $52,014; bridges (iron), $36,400; steel rails, ties, joints, ballast, etc., $54,220; connecting with main line, $1,000. fencing $2,880; building three stations, $10,000; signals, $3,000; and 10 per cent. of estimated cost, exclusive of land damage, added, $22,000. The total length of the proposed line is 3.07 miles; maximum grade, 63.36 per mile; highway crossings at grade, 2; crossings over highways, 3; under highways, 2. It is the intention of the Boston & Albany to run their suburban passenger trains out on the main line to Riverside, and then by the new spur across to Newton Highlands and into Boston, and running them out on the branch and back on the main line in the same way. A larger number of trains can be run in this way than at present."

Boston & Maine and the Eastern.—In the United States Circuit Court in Boston, April 19, a complaint was filed by F. W. Hill and other stockholders of the Maine Central Co. asking for an injunction to restrain the Eastern Co. from completing the lease of its road to the Boston & Maine. The petitioners claim that a majority of the stock of the Maine Central Co. being held by the Eastern Co. the lease would place that company entirely under the control of the Boston & Maine, and enable the last named company to elect a board of directors and to set aside the traffic contracts now in force, and would also make it possible to exercise unjust discrimination against the Maine Central Co. in such manner as to make that company unable to pay dividends on its stock, or even interest on its bonds. The petitioners represent that, being holders of a minority of the stock, they cannot act through the board of directors, and ask that relief may be given them through the courts. The case was set for hearing in June next.

Burlington, Cedar Rapids & Northern.—An additional contract for grading 25 miles on the extension of the Pacific Division has been let to C. C. Smith, of La Crosse, Wis. This make 75 miles under contract, from Spirit Lake, Ia., to near Pipestone, Minn. The extension is to run into Dakota.

California Southern.—A circular issued by President Nickerson, from the office in Boston, says: "The recent heavy storms in California have seriously damaged our property, and, although the extent of the loss is not fully known, it is estimated by Superintendent Victor at from $200,000 to $250,000. The whole road is badly broken and damaged, but the greatest damage is through Temecula Cañon, where all our bridges, with two stone abutments and four miles of rails and fastenings, have been swept away, while the grade for 13 miles is very badly damaged. Since the wash-outs it has been impossible to run any trains through, and Superintendent Victor writes that the country is so badly flooded it is impossible to make a reliable estimate of the cost of repairs, but that it will take about two months to repair the road after the materials are on hand. He also writes that the prospects are very favorable for the crops, and that it is of the utmost importance to repair the road in time to secure the business. I have already sent Mr. John F. Anderson, a very able engineer of long experience, who has reached the line, and will report the condition in which he finds the road, the materials required and the cost of repairs. The company is without funds to repair the road.

"Under these circumstances I hastily called together as many of the large stockholders as I could, and 17 were present at the meeting, held Saturday, April 12, 1884. After discussing the situation, the parties present voted unanimously that the stockholders be requested to subscribe 10 per cent. on the par value of their stock as a loan to the company, to save the property from disaster, said loan to be secured in such manner as a committee appointed should decide. The committee consisted of Messrs. O. W. Peabody, Arthur Sewall, E. W. Converse and Walter L. Frost. This committee has since reported, and recommends that for the purpose of raising the money to make the repairs the company place a second mortgage on the property to the extent of $5,000 per mile, increasing the capital stock the same amount, and that a circular be sent to the stockholders proposing a loan to be made to the company for one year, in blocks of $500; each of said blocks to be secured with the company's note, drawing 7 per cent. interest and 2½ per cent. commission, with collateral for each $500, as follows: $250 in the company's first-mortgage bonds, $750 in its second-mortgage 6 per cent. bonds, the first coupon on which shall be due April 1, 1885; and 10 shares of its capital stock. Said collateral to be put into the hands of Warren Sawyer, trustee, and said trustee to certify on each note that he holds the collateral for the benefit of the parties making the loan. The committee recommended raising $303.500, and under this subscription each holder of 50 shares of stock is entitled to subsribe for one block of $500."

California & Nevada.—This company was organized some time ago to build a narrow-gauge road from Oakland, Cal., by way of Livermore and Modesto to Bodie, to connect with the Carson & Colorado road. A branch to Stockton was also proposed. The company claims to have expended considerable money in grading and purchase of right of way, and is now trying to raise money for the completion of the first section of the road from Oakland to Walnut Creek, 30 miles, by the issue of mortgage bonds.

Cape Fear & Yadkin Valley.—The track on this road is now laid to Greensboro, N. C., 97 miles from Fayetteville, and the work of finishing up is progressing as fast as possible. The road will be opened in about two weeks, when several excursions over the line will be given. The working force will then be transferred to the extension south of Fayetteville, in order to complete it to Shoe Heel as soon as possible.

Chester & Lenoir.—Track on this road is now laid to Icard Road, N. C., 9 miles beyond the last point noted and 17 miles from Hickory. There remain but three miles to be laid to reach the terminus at Lenoir, but this will take some little time, as the recent heavy rains have caused several bad wash-outs in the road-bed. The road, which is operated by the Charlotte, Columbia & Augusta Co., will be 110 miles long, from Chester, S. C., to Lenoir, N. C. It is of 3 ft. gauge.

Chesapeake & Ohio.—This company's statement for February and the two months ending Feb. 29 is as follows:

	February.		Two months.	
	1884.	1883.	1884.	1883.
Earnings.....	$266.072	$253,446	$546,693	$505,416
Expenses.....	199,049	192,670	414,061	404,385
Net earnings..	$67,023	$60,776	$132,632	$101,031
Per ct. of exps..	73.8	76.1	75.7	80.4

For the two months this shows an increase of $41,277, or 8.2 per cent., in gross earnings; an increase of $9,676, or 2.4 per cent., in expenses, and a resulting gain in net earnings of $31,601, or 31.3 per cent.

For March the gross earnings were $308.111, against $337,795 in March, 1883; a decrease of $29,684, or 8.8 per cent. The statement says: "The decrease in gross earnings for the month of March in comparing the estimated earnings for 1884, with the actual earnings for 1883, is only apparent, for the reason that in March, 1883, a change in the method of determining the earnings applicable to each month was inaugurated which concentrated in the accounts of that month about $66,000 of the revenue which would otherwise have appeared in February and April."

For the company's Elizabethtown, Lexington & Big Sandy line the statement for February and the two months is as follows:

	February.		Two months.	
	1884.	1883.	1884.	1883.
Earnings.....	$45,949	$55,498	$93,337	$103,391
Expenses...	37,655	47,215	81,537	93,123
Net earnings....	$8,294	$8,283	$11,800	$10,268
P.c. of exp's.....	81.8	85.1	87.4	90.1

For the two months this shows a decrease of $10,054, or 9.9 per cent., in gross earnings, with a decrease of $11,586, or 12.3 per cent., in expenses, and a resulting gain in net earnings of $1,532, or 14.9 per cent.

Chicago & Northwestern.—The stockholders of this company will be asked to vote on June 26 on the question of purchasing the Chicago, Iowa & Nebraska, the Cedar Rapids & Misssouri River and the Maple River roads, and of issuing 147,675 shares of new stock in payment for those roads. The Chicago & Northwestern Co. will issue its stock for that of the purchased roads, and will assume all their liabilities. The roads are now all leased and worked by the Northwestern, and the rentals paid last year amounted to considerably more than will be required to pay interest on the bonds assumed and dividends on the new stock.

The proposed terms of consolidation of these Blair roads, so called, with the Northwestern are in brief these: Chicago, Iowa & Nebraska stock to be exchanged for Northwestern on the basis of 1 share for 1½ Northwestern common, assets to be transferred, and all debts and obligations to be guaranteed by the Northwestern. Cedar Rapids & Missouri River common stock to be exchanged share for share, the preferred to be exchanged in multiples of 10 shares for 25-year 7 per cent. bonds, to be guaranteed by the Northwestern and secured by mortgage on the road between Cedar Rapids and Boone, and shares less than 10 to be paid for in cash by the Northwestern at the market price of the preferred stock, the Northwestern to assume and guarantee the payment of principal and interest of all the bonds of the Cedar Rapids & Missouri River Railroad. Maple River stock to the amount of 20,328 shares to be exchanged for Northwestern] share for share, the latter to assume and guarantee principal and interest of all Maple River bonds. Freemont, Elkhorn & Missouri Valley stock to be sold at par and payment made in 25-year 5 per cent. Northwestern debentures at par, holdings of less than 10 shares to be paid for in cash, the Northwestern to guarantee principal and interest of the 6 per cent. 50-year consolidated bonds, to receive all assets and pay all debts.

Chicago, St. Paul, Minneapolis & Omaha.—Notice has been filed with the Secretary of State, of Wisconsin, of the purchase by this company of the Eau Claire & Chippewa Falls Railroad. The transfer is nominal, as the road has always been practically owned by the Omaha Company.

Cincinnati & Eastern.—Track on this road is now laid to Rushtown, O., 10 miles east of the late terminus at Henley and 100 miles from Cincinnati. The grading on the extension to Portsmouth is well advanced, and the bridge over the Scioto River is in progress, so that there will be little delay in the tracklaying.

Cincinnati, Indianapolis, St. Louis & Chicago.—A dispatch from Cincinnati, April 19, says: "The directors of this company have approved the sale of an interest in the Grand Central Station to the Baltimore & Ohio and the Cleveland, Columbus, Cincinnati & Indianapolis, making the three roads equal owners. This relieves the first named company from making special provision for the payment of its floating debt, and the committee appointed to issue preferred stock for that purpose has been discharged. The station has been enlarged, and will probably be used by other roads."

Cincinnati Northwestern.—This company has been organized by the persons who some time ago bought at foreclosure sale the College Hill road, a short suburban line running out of Cincinnati. The new company purposes extending the road to Connersville, Ind., and has completed arrangements for beginning work. The Treasurer has been instructed to contract for steel rails and for several other purchases of material.

Cincinnati, Van Wert & Michigan.—The trustees of the estate of Graff, Bennett & Co., of Pittsburgh, have sold to this company the Paulding & Cecil road running from Cecil, O., to Paulding Furnace, 6 miles, which was owned by the estate. The price paid was $86,500. The road will be used as part of the line of this company.

Columbus, Hope & Greensburg.—This road is now completed to Columbus, Ind., 11 miles westward from the late terminus at Hope, and 28 miles from Greensburg. The stations on the new line are: Greensburg, Ewington, Burney, Hartsville Crossing, Hope, and Columbus. The road will be worked as a branch of the Cincinnati, Indianapolis, St. Louis & Chicago line, with which it connects at Greensburg.

Denver & Rio Grande.—In a suit brought by this company in the New York Supreme Court against the Denver & Rio Grande Co., a temporary injunction has been issued restraining the latter company from enforcing a certain article of the lease, which provides that D. C. Dodge shall be Manager of the leased road.

Fargo Southern.—A contract has been let to George Foley of Fargo, Dak., for completing the tracklaying on this road. He will begin work at once at both ends of the track at Hickson, Dak., and Wahpeton.

Fort Worth & Southwestern.—This company has been organized to build a railroad from Forth Worth, Tex., southwest to Brownwood, about 120 miles. A considerable amount has been subscribed and several towns along the line have promised large amounts.

Grand Forks, Crookston & Lake Superior.—Work will be begun on this road as soon as arrangements can be made for a connection with the Northern Pacific. The company has now a party of engineers in the field surveying the proposed line from Grand Forks eastward to Brainerd, about 175 miles.

Grand Rapids & Indiana.—At a meeting of the bondholders of the Continental Improvement Co., to be held in Philadelphia, May 15, they will be asked to consent "to the issue by the Grand Rapids & Indiana Railroad Co. of certain bonds, which shall take precedence of the income bonds of said railroad company, forming part of the security pledged for the redemption of said bonds of the Continental Improvement Co., such new issue of bonds by the Grand Rapids & Indiana Railroad Co. to be used in settlement of the debt owing by that company to the Pennsylvania Railroad Co. and the Pennsylvania Company."

Grand Trunk.—A dispatch from Toronto, Ont., says: "Delegates from the local trainmen who interviewed General Manager Hickson of the Grand Trunk at Montreal recently have been presented with Superintendent Spicer's ultimatum. This document requests the delegates to inform the Toronto trainmen that diminishing receipts compel the Grand Trunk management to order a reduction of 5 per cent. on the wages of all train-hands receiving over $1 per day. This reduction, if accepted, will come into immediate effect, and will be continued for six months, when it is believed the close of navigation will give an impetus to freight transportation, which will enable the company to return to the present rate of wages; at all events, Mr. Spicer promises that the reduction will cease after the lapse of 24 weeks. A meeting of the trainmen has been called to discuss the situation. It is probable that after the engineers announced their determination to accept a 5 per cent. reduction the trainmen will succumb to the inevitable, and not take the chances of a long strike."

The latest advices are that the trainmen have decided to accept the reduction of wages, and that there will be no strike.

A dispatch of April 23 from London says: "The half-yearly meeting of the Grand Trunk Railway was held to-day. The report of the directors was unanimously adopted, and the agreement with the Welland Railroad Co. for the consolidation of that undertaking with the Grand Trunk was ratified by a resolution. Some little criticism of the terms of the agreement was indulged in, but the resolution was practically unanimous. During the discussion on the condition of the Grand Trunk several speakers protested strongly against the action of the Dominion Government in subsidizing out of public taxation a road (the Canadian Pacific) in order that it might be better enabled to diminish the value of investments in the Grand Trunk."

Honduras.—The President of Honduras has granted a very valuable railroad concession to three New York capitalists—William H. Warner, H. K. Wheeler and M. O. Sheldon. A land grant of eight square miles on each side of the track for each mile of road constructed is to belong to any company organized by these gentlemen, on completing a railroad by Aug. 1, 1887, from Trujillo (a seaport of 5,000 inhabitants) to the Roman River, a distance of 20 miles.

The road is then to extend for a distance of 50 miles up the Arenal Valley. It will traverse a country very rich in cabinet and dye woods.

Houston, East & West Texas.—This company offered to extend its road from the present terminus to Shreveport, La., provided that city would give $50,000 and the right of way and grounds for station and shops. The proposition has been accepted, and work will be begun at once at Shreveport and Nacogdoches, Tex., the present northern terminus of the line.

Illinois Central.—This company's statement for March shows earnings from traffic during that month as follows:

	1884.	1883.	Decrease.	P. c.
Illinois lines, and Southern Division	$852,816	$931,933	$79,117	8.5
Iowa leased lines	140,597	204,934	64,337	31.4
Total	$993,413	$1,136,867	$143,454	12.6

The Land Department reports that during the month 1,588 acres of land were sold for $8,313. The collections on land accounts during the month amounted to $6,975.

Tracklaying has been resumed on the Canton, Aberdeen & Nashville Branch of the Southern Division, and work is progressing steadily. The terminal grounds at Aberdeen, Miss., have been laid out and work begun on the station buildings. The heavy work on this branch at Blanton's Gap is now about finished.

Ilwaco, Shoalwater Bay & Gray's Harbor.—This company will shortly begin work on the section of its road from Ilwaco, Wash. Ter., at the mouth of the Columbia River, northward to the southern end of Shoalwater Bay, a distance of 8 miles. When this is finished work will be begun on another section of 15 miles, from the north end of Shoalwater Bay north to Gray's Harbor.

Long Island North Shore.—The old project for a railroad along the north shore of Long Island from Long Island City to Huntington has been revived, and it is said that negotiations are now in progress for the money required to build it.

Louisville, New Orleans & Texas.—The tracklayers working northward from Baton Rouge, La., have made rapid progress lately, and the rails are down to a point 42 miles northward from that city. Work is also in progress on the tracklaying from Vicksburg southward.

Lowell & Framingham.—The stockholders of this company will meet April 26, to vote on the question of ratifying a consolidation with the Old Colony Co. The road is now leased to that company.

Michigan & Ohio.—This company has let a contract to Mr. T. H. Hamilton, of Toledo, O., for construction of repair shops at Marshall, Mich. The ground for the shops has been graded and work upon them will be begun at once.

Nashville, Chattanooga & St. Louis.—This company's statement for March and the nine months of the fiscal year from July 1 to March 31 is as follows:

	March.		Nine months.	
	1884.	1883.	1883-84.	1882-83.
Earnings	$206 819	$206,163	$1,831,212	$1,780,348
Expenses	118,880	115,664	999,728	987,689
Net earnings	$87,939	$90,499	$831,484	$792,659
Interest and taxes			497,707	488,662
Surplus			$333,777	$304,037

For the nine months this shows an increase of $50,864, or 2.9 per cent., in gross earnings; an increase of $12,039, or 1.2 per cent., in expenses; an increase of $38,825, or 4.9 per cent., in net earnings, and an increase of $29,740, or 9.8 per cent., in surplus income.

New York & Long Branch.—The taking of evidence in the suit to prevent the breaking of the contract under which the Pennsylvania Railroad Co. uses this road was continued in New York, April 22, but nothing specially new was brought out. The hearing was adjourned until April 29, in Philadelphia.

New York & New England.—The United States Circuit Court has issued orders allowing the Receiver to pay the claims of a number of small creditors from cash balance on hand. The Court also authorized the Receiver to issue second mortgage bonds sufficient to pay Thomas Potter, contractor, for the work done in filling up South Boston Flats, the bonds to be issued at par and to an amount to be agreed upon by the referees.

The consideration of the petition of the New York, Lake Erie & Western Co., for an order directing the Receiver to pay its claim for $125,000 has been postponed until June 28.

In response to a question from the Judge, Receiver Clark said that if the gains shown in January and February were maintained through the year the road would be able to pay its fixed charges for the year. The gains in those months showed $50,000 per month better than last year.

In postponing the matter to June 28 Judge Shipman said that would be just before coupon day, and if Mr. Clark could then show that he had funds above those needed to pay the coupons the Erie would then have some chance of getting some money.

New York, Philadelphia & Norfolk.—Mr. W. L. Scott, President of this company, has issued the following circular: "The Eastern Shore Railroad Co. having been consolidated with this company, the line from Delmar to Crisfield will hereafter be operated in connection with the line from Peninsula Junction to Pocomoke City, and will be known as the New York, Philadelphia & Norfolk Railroad."

The company, therefore, owns and operates the line from Delmar, the terminus of the Delaware Railroad, to Crisfield, Md., 38 miles, and the line from Peninsula Junction (21 miles south of Delmar) to Pocomoke, 10 miles. It is building an extension from Pocomoke to Cherrystone, Va., about 65 miles.

New York, West Shore & Buffalo.—In Newark, N. J., April 18, the Chancellor heard arguments on the application of the Receiver of the North River Construction Co. for leave to accept $15,000,000 in second-mortgage bonds in full satisfaction of that company's claim against the New York, West Shore & Buffalo Co. The adjustment of the accounts of the two companies was left to arbitration and the amount due the construction company was fixed by the arbitrators at about $7,500,000. The application of the Receiver was made on this decision and in accordance with the general plan proposed for the relief of the West Shore Co. The application was opposed by some of the creditors of the construction company, and the decision of the Court was reserved.

Ohio River.—Work on this road is progressing well, nearly all the gaps made by the floods in the Ohio River this spring having been filled up. The company hopes to have trains running between Parkersburg, W. Va., and Wheeling by the 1st of July.

Oregon & Transcontinental.—A letter signed by Work, Strong & Co.; Decker, Howell & Co.; Brayton, Ives & Co.; W. S. Nichols & Co.; John H. Davis & Co.; Brody, McClellan & Co., and others, representing the holders of over 100,000 shares of the Oregon & Transcontinental Company, was sent on April 18 to President Wm. Endicott, at Boston, making the following requests: (1.) That a full statement of the company's assets and liabilities be furnished at once. (2.) That the office and books of the company be returned without delay to New York, where the greater part of the company's property and stockholders are. (3.) That he will inform them whether the directors of the company are preparing any plan for putting indebtedness into more favorable form, and for relieving it from some of its burdensome contracts.

They state that they have great faith in the inherent value of the property, and express confidence that diligent and intelligent effort will eventually bring it triumphantly from its embarrassments.

President Endicott has addressod a letter to the New York stockholders in reply to the one above referred to, which contains the following:

"I must protest against the implication of the letter that there has ever been any disposition on the part of the directors of the Oregon & Transcontinental Co. to withhold from stockholders information as to the affairs of the company. So far as I am aware no stockholder has ever been refused any information proper to be communicated, though it has not always been possible to be accurate, owing to the many unsettled accounts for construction, etc.

"The officers of the company have no possible motive for concealment.

"As to the removal of the officers of the company to New York, I have only to say that the Assistant Treasurer, with the books, had been transferred there before the receipt of your letter, and will remain there.

"Mr. Elijah Smith, who is in charge of the affairs at the New York office, will show to any of you a statement of the assets and aggregate liabilities of the company.

"I deem it improper to make public exhibit of the names of the creditors, with the collateral held by each, as I know it to be distasteful to many of them, and I have already received requests from several that the details of their loans be withheld from public inspection.

"As the inquiry has often been made in New York papers as to what has become of the large capital of the company, it may not be inopportune to remind the stockholders that the shrinkage of market price in the Northern Pacific and Oregon Railway & Navigation Co. stocks, held in December last by the O & T. Co., will amount during the past year to more than $20,000,000, or more than $50 per share upon O. & T. stock.

"In regard to maturing a funding scheme, I can only say that it has been much discussed, but it seems hardly practicable to attempt it with success until later in the year. The $8,000,000 loan matures Dec. 31, and the remaining indebtedness of the company at a somewhat remote date, so that the collateral is not at present available. There is much reason to expect that the summer business upon both the Northern Pacific and the Oregon Railroad & Navigation lines will be such as very much to strengthen the collateral which the company will have to offer as security for a long loan. The annual meeting of the corporation will occur within 60 days, and, as changes in the management are possible, it seems to me more appropriate to leave that matter for a new board of directors to deal with.

"The company's officers have endeavored to bring the company from the very critical condition in which it was found in December last into one of undoubted solvency, to adjust and pay the floating indebtedness which proved to be much larger than had been anticipated, and generally to bring the affairs into snug condition. Much the larger part of this work has been accomplished, and it now remains to be seen how far the development of the Northwestern territory will make good the expectations which led to the organization of the company."

Pacific Mail Steamship Co.—The directors of this company have declared a dividend of 1¼ per cent., payable May 1. The report shows for nine months ending Feb. 29, 1884, and Feb. 28, 1883, the following:

	1883-84.	1882-83.	Increase.	P. c.
Earnings	$3,633,607	$3,036,916	$596,691	19.9
Expenses	2,563,085	2,379,324	183,761	7.7
Net earnings	$1,070,522	$657,592	$412,930	62.8

The President remarks upon this that "the above exhibit shows the net earnings from June 1, 1883, to Feb. 29, 1884, to have been $1,070,522, or a trifle more than 7 per cent. per annum. During this period we have continued the payments of $20,000 per month on account of the bonds, and paid the last claim of the city against the company for the personal taxes of 1881, amounting to $111,150. The outlook for the coming year gives me every reason to believe our earnings will be much larger and at a very slight increase of expenses, inasmuch as supplies of all kinds are cheaper, especially coal." The company has now $1,118,000 cash on hand (prior to the payment of the dividend).

Pennsylvania.—The Susquehanna & Clearfield Branch is now completed and will soon be opened for business. It starts from Keating, Pa., on the Philadelphia & Erie Division, just where that road leaves the West Branch of the Susquehanna and begins the ascent of the Sinnemahoning Valley, and follows up the West Branch 22 miles to Karthaus in Clearfield County. The new road taps the Snow Shoe coal district on its northern side, and reaches some valuable coal deposits which have never been developed, owing to lack of transportation. The road is the final realization of a project first started nearly 40 years ago.

People's Railway Co.—This extraordinary enterprise has been very quiet for some time, but was brought into prominence in San Francisco the other day by a fight between the President and one of the directors, the latter having accused the President of obtaining $90,000 cash in subscriptions for which he had not accounted. He also charged that the President had prepared to issue $20,000,000 in bonds, taking what he could get for them. If the company had actually received $90,000 in cash, which is somewhat doubtful, it is evident that the people of California are much more gullible than those of the Eastern states, where the amount subscribed to the stock was exceedingly small.

Pittsburgh & Allegheny Central.—A writ of *quo warranto* has been issued against this company, requiring its officers to show on what ground they claim to have the franchises and privileges of a railroad corporation. It is alleged in the complaint that the company has no intention of building the projected road, but has been organized only to sell out to other parties.

Pittsburgh & Western.—The Pittsburgh *Chronicle-Telegraph* of April 18 says: "It is now said that the Pittsburgh & Western may become an active competitor of the Allegheny Valley Railroad for a considerable amount of traffic heretofore controlled by the latter. As foreshadowed, the plan of the Pittsburgh & Western is to complete the standard gauge track from Butler to Callery Junction, and to run a new route to Petrolia *via* Greece City, Millerstown and Karns City, avoiding several long trestles, heavy grades and sharp curves, and following the Bear Creek Valley below Martinsburg. This route was surveyed two years ago, being much shorter than the one at present in use, and will give the Pittsburgh & Western an hour's advantage in time over the Valley road."

Portland & Ogdensburg.—The United States Circuit Court for New Hampshire, having taken concurrent action with the Maine courts in appointing General Anderson as Receiver of this road, has made a proper decree. The Court is now considering a motion of the Receiver for authority to issue $100,000 in certificates to be used in improvements on the road.

Preston & Smithville.—This company has been organized to build a railroad from Smithville, Ga., on the Central Railroad, west by north to Preston, the county seat of Webster County, a distance of about 24 miles. Work on the road will be very light.

San Antonio & Aransas.—A project is being worked up for a railroad from San Antonio, Tex., southwest to Rockport, on Aransas Bay, a distance of 130 miles. It is said that an offer has been made by parties in New York to take hold of the enterprise provided sufficient money is raised in Texas to complete the grading.

Securities on the New York Stock Exchange.—The Governing Committee has placed the following securities on the lists at the Stock Exchange:

Louisville & Nashville, $10,000,000 trust-mortgage bonds, dated March 1, 1882.

Morgan's Louisiana & Texas, $5,000,000 stock and $1,494,000 first mortgage bonds.

New York, Lake Erie & Western, $5,000.000 collateral trust bonds.

St. Louis & San Francisco.—Work is soon to be begun on the bridge over the Arkansas River at Van Buren, Ark., where transfer is now made by ferry. The specifications are being prepared and contracts will be let as soon as possible. The bridge will be 1,800 ft. long and will have a draw-span 360 ft. in length.

St. Paul, Minneapolis & Manitoba.—On the afternoon of April 16 the first train crossed the great stone bridge of this company over the Mississippi below the Falls of St. Anthony. The train consisted of a locomotive and a passenger car carrying several officers of the road. This bridge is on the company's new short line between St. Paul and Minneapolis and is the first and only stone bridge over the Mississippi.

Texas Trunk.—It is said that that owners of this road have made an arrangement with parties in New York to advance the money for an extension of this road at least 100 miles southeast of its present terminus.

Union Pacific.—A dispatch from Philadelphia, April 21, says: "Oliver Ames, of Massachusetts, to-day filed in the United States Circuit Court his answer to the petition of the Union Pacific Railway Co. asking for his removal from the receivership of the Crédit Mobilier. The railway company succeeded to the franchises of the Union Pacific Railroad and got a judgment against the Crédit Mobilier in New York for $1,299,365. The petitioners allege that Ames had done nothing toward winding up the affairs of the Crédit Mobilier, which is alleged to be insolvent. Ames has taken proceedings to have the New York judgment opened, and at the same time is pressing a suit pending in Boston by the Crédit Mobilier against the Union Pacific Railroad Co. to recover on a promissory note for $2,000,000, given by the latter in settling an account. He declares that it is the intention of the Union Pacific Raiway Co. to use the New York judgment as a set-off in the Massachusetts suit. That judgment, he says, was obtained by fraud.

"Ames, in speaking of the judgment obtained in New York, says, upon information and belief, that a majority of the stock of the Crédit Mobilier of America is and was at the time of his appointment as Receiver of the company owned by the petitioner or held by the persons acting in his behalf and in its interest; that the officers of the Crédit Mobilier, including its President and directors, were all chosen or appointed by the petitioner; that all its books and papers and property of every nature are in the possession of the petitioner, or of its servants or agents, and that its President, upon whom the summons in the suit in New York was served, was, and is a director of the petitioner, and he avers that the judgment was obtained by collusion between the petitioner and its officers, whom it had appointed officers of the Crédit Mobilier. He denies upon information and belief that the amount of money for which judgment was recovered is justly due from the Crédit Mobilier to the petitioner.

"Mr. Ames denies that the Crédit Mobilier is insolvent, and declares that when it shall have recovered its claim from the Union Pacific Railroad Co. it will have more than enough to pay its debts. He says that the appointment of a citizen of Pennsylvania as Receiver would be inconvenient, as he could not conveniently attend to the prosecution of the litigation in Massachusetts that must for a time form one of the most important duties of the Receiver. He asks that the Court restrain the petitioner from interfering with him, and order it to deliver up to him the books and papers in relation to the Crédit Mobilier, all of which he avers are in its possession. The matter was put on the regular list for argument."

In the United States Supreme Court in Washington, April 21, a decision was given in the suits brought by the state of Kansas against this company, to set aside the consolidation of the Union Pacific and the Kansas Pacific companies. The case had been carried to the Supreme Court on an appeal from an order of the Circuit Court remanding the case to the state courts of Kansas, in which the suits were originally brought. The Supreme Court has decided that the suits have arisen under the laws of the United States and that they were properly removable to the Federal Court under the statutes. The order to remand the cases to the state court is therefore reversed and the United States Circuit Court is directed to entertain the suits and to proceed with them.

This company will shortly begin work on an extension of its Omaha & Republican Valley Branch from Stromberg, Neb., southwest through Sutton. The terminus is not yet decided upon.

Vicksburg, Shreveport & Pacific.—Tracklaying on the extension to Shreveport, La., has been resumed, a large shipment of rails having arrived. The material for the draw-bridge over Bayou Danchitte is being delivered, and work is progressing rapidly.

Washington, Cincinnati & St. Louis.—The parties who bought this property of the old company of this name at foreclosure sale, met at Harrisonburg, Va., April 18, and completed a new organization. At this meeting it was decided at once to go ahead with construction of the road from Harrisonburg west to the Dora coal fields, a distance of 17 miles. Further construction will be begun as soon as rights of way are settled.